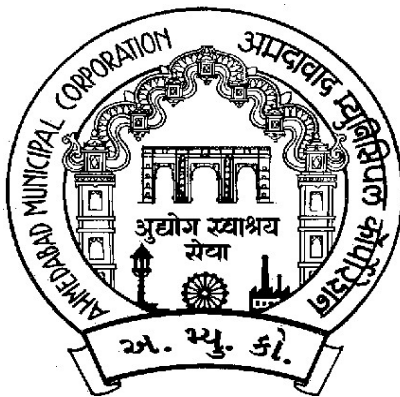


**AHMEDABAD MUNICIPAL CORPORATION**

(TRAFFIC DEPARTMENT)

**SHORT TENDER NOTICE NO: 03/2026-27 Tender No. 20.**



**TENDER DOCUMENT FOR**

**“Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”**

***VOLUME –I TECHNICAL BID***

**Municipal Commissioner**

**Ahmedabad Municipal Corporation.**

**Sardar Patel Bhavan, Danapith, AHMEDABAD – 380 001**

**PHONE : 91-079-25391811-30; ext:-528 Fax: 91-079-25354638**

**[www.ahmedabadcity.gov.in](http://www.ahmedabadcity.gov.in)**

**e-mail: [info@nprocure.com](mailto:info@nprocure.com)**

**AHMEDABAD MUNICIPAL CORPORATION  
TENDER DOCUMENTS CONTENTS**

Sr.	DESCRIPTION
	<b>Volume-1</b>
1	<b>TENDER NOTICE</b>
2	<b>INFORMATION TO TENDERERS</b>
3	<b>STATEMENT AND FORMS</b>
4	<b>INVITATION FOR BIDS (IFB)</b>
5	<b><u>Section I – INSTRUCTIONS TO BIDDERS (ITB)</u></b>
6	<b><u>Section II - CONDITIONS OF PARTICULAR APPLICATION</u></b>
7	<b><u>Section III FORM OF BID AND APPENDIX TO BID</u></b>
8	<b><u>Section IV FORMS</u></b>
9	<b><u>Section V TECHNICAL SPECIFICATION</u></b>
	<b>Volume-2</b>
10	<b><u>Section VI</u> <b>BILL OF QUANTITIES</b></b>

**DOWNLOADING  
OF TENDER  
FROM THE AMC  
WEBSITE**  
[www.nprocure.com](http://www.nprocure.com)

**Automatic  
Generate date**

**LAST DATE OF  
ONLINE  
TENDER  
SUBMISSION**

**Dt. 23.07.2026  
Up to 18:00 Hrs**

**HARD COPY  
SUBMISSION**

**Dt. 24.07.2026  
UP TO 16:00 Hrs**

**OPENING OF  
TENDER**

**Dt. 24.07.2026  
17:00 Hrs**

AHMEDABAD MUNICIPAL CORPORATION  
 "Sardar Patel Bhavan", Danapith, Ahmedabad - 380 001.  
 Tele. Phone: 079-25391811 / 25391830, Fax: 91-079 -25350926  
**SHORT TENDER NOTICE NO: 03/2026-27 Tender No. 20.**

Municipal Commissioner invites percentage rate sealed tenders from interested contractors for  
**“Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”**

1	Name of work	<b>“Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”</b>
2	Time Limit	<b>12 months (Excluding moon soon)</b>
3	Eligibility Criteria	Register “B” class in PWD in Govt. R&B/CPWD-ROAD/AMC or equivalent registration with any other state Govt. (However party shall have to obtain AMC registration within 6 months of tender approval)
4	Estimated Cost put to tender (At present value)	<b>Rs. 958051.22</b>
5	Earnest Money Deposit	<b>Rs.9580</b> (Demand Draft in favor of Municipal Commissioner, Ahmedabad) To be submitted as prescribed in 7.0 below. Demand Draft shall be from Nationalized Bank and valid for 90 days. It will be release along with final bill.
6	Tender fee (Non refundable)	<b>Rs.900/-</b> (Demand Draft in favour of Municipal Commissioner, Ahmedabad)
7	Submission of EMD and Tender Fees	In separate sealed cover each for EMD and Tender Fees along with Tender as described in the invitation of tender and submitted to Assistant Manager, Project, 2nd Floor, C – Wing, Municipal Building, Ahmedabad Municipal Corporation, Sardar Patel Bhavan, Danapith, Ahmedabad-380001 To be Submitted Physically on <b>Date: 24.07.2026 up to 16:00 hrs</b>
8	Tenders issue date	Tenders shall be down loaded from the AMC website <a href="http://www.nprocure.com">www.nprocure.com</a>
9	Last date of receiving physical tenders.	<b>Date: 24.07.2026 up to 16:00 hrs</b> only. The tenders received after this date and time will not be entertained under any circumstances.
10	Date of Opening	Technical Bid will be opened on line as well as physically on <b>Date: 24.07.2026 up to 17:00 hrs</b> in the office of Addl. City Engineer (Central Zone), Ahmedabad Municipal Corporation, Sardar Patel Bhavan, Danapith, Ahmedabad-380001
11	Mode of sending the Tender Documents	On line submission of required minimum documents for qualification criteria. Physically in sealed envelope superscripted the name of work be submitted in Duplicate Document shall be submitted in sealed envelope systems By RPAD/Speed post/ Hand Delivery/ Courier in sealed covers as described in submission of the tender.
12	Terms, Condition, & Specification	All general condition of contract of form B1 condition of contract shall be applicable. Except Specified separately.

Conditional tenders will not be accepted. Municipal Commissioner reserves the rights to reject any or all the tenders without assigning any reasons thereof.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
 (Central Zone)  
 Ahmedabad Municipal Corporation

**General terms & conditions**

૧. ઉપરોક્ત ટેન્ડરો જે તે વર્ગમાં માન્ય રજીસ્ટ્રેશન ધરાવતા કોન્ટ્રાક્ટરશ્રીઓએ ભરવા.
૨. ટેન્ડરની નિયત ટેન્ડર ફી તથા ઇ.એમ.ડી. બંધ કરવામાં ઉપર ના સરનામે રૂબરૂ / રજીસ્ટર એ.ડી./ સ્પીડપોસ્ટ/ કુરીયરથી નિયત સમયમાં મોકલવાના રહેશે.
૩. કોન્ટ્રાક્ટરશ્રીઓએ ટેન્ડરની સાથે મ્યુનિસિપલ માન્ય રજીસ્ટ્રેશનની / ગવર્નમેન્ટ રજીસ્ટ્રેશનની કોપી, (ટેન્ડર કોપી તથા અન્ય પુરાવા સાથે) અચૂક સામેલ કરવાની રહેશે અને કવર ઉપર ટેન્ડર નંબર તથા કોન્ટેક્ટ નંબર જરૂર સ્પષ્ટ દર્શાવવાનો રહેશે. બંધ કવર ઉપર ટેન્ડર નોટીસ નંબર, ટેન્ડર નંબર, કામનું નામ તથા, કોન્ટ્રાક્ટરની સંસ્થાનું નામ તથા કોન્ટેક્ટ નંબર અવશ્ય દર્શાવવાના રહેશે. કોન્ટ્રાક્ટરોએ ટેન્ડરમાં બેંકનું નામ, ખાતા નંબર, માઈકર નંબર અને સરનામું સ્પષ્ટ અક્ષરોમાં લખવું. જો કોન્ટ્રાક્ટરશ્રી મ્યુનિસિપલ માન્ય રજીસ્ટ્રેશન ધરાવતા ના હોય તો તેઓએ ટેન્ડર મંજૂર થયાના ૩-માસની સમય મર્યાદામાં રજીસ્ટ્રેશનની કાર્યવાહી પૂર્ણ કરવાની રહેશે.
૪. ટેન્ડર ફી ડીમાન્ડ ડ્રાફ્ટથી ચૂકવવાની રહેશે. દરેક ટેન્ડર દીઠ અલગ થી ટેન્ડર ફી ભરવાની રહેશે.
૫. ઓછી રકમની ટેન્ડર ફી, કે ઇ.એમ.ડી અથવા ટેન્ડર ફી, ઇ.એમ.ડી વિનાના ટેન્ડરો રદબાતલ (કેન્સલ) ગણાશે.
૬. ટેન્ડર સાથે મુકવામાં આવતી અર્નેસ્ટમની, રૂ.૮૫૮૦ ડીમાન્ડ ડ્રાફ્ટ થી જ સ્વીકારવામાં આવશે. દરેક ટેન્ડર દીઠ અલગ ઇ.એમ.ડી. ભરવાની રહેશે. ઇ.એમ.ડી રકમ ડિમાન્ડ ડ્રાફ્ટના સ્વરૂપમાં આપવાની રહેશે.
૭. ટેન્ડર ફી તથા ઇ.એમ.ડી ની રકમના ડી.ડી. ની પાછળ કોન્ટ્રાક્ટરશ્રીએ પોતાની સંસ્થાનું નામ તથા મોબાઈલ નંબર અવશ્ય લખવાનો રહેશે. કોન્ટ્રાક્ટરે પોતાની સંસ્થાના ડી.ડી. ટેન્ડર ઇશ્યુ થયા તારીખ બાદના જ આપવા.
૮. શરતી ટેન્ડરો રદબાતલ ગણાશે.
૯. જો ટેન્ડરમાં સ્પષ્ટ ઉલ્લેખ કરાયેલ હોય તો ચોમાસાને કારણે ખાતાકીય સુચના અન્વયે જ્યારે જ્યારે કામ બંધ રાખવાનું થાય તે સમયને કામની મુદતમાં મજરે આપવામાં આવશે. પરંતુ આ અન્વયે કોઈ ભાવ વધારો આપવામાં આવશે નહીં. જેની નોંધ દરેક ટેન્ડરે લેવી.
૧૦. ટેન્ડરો કોઈપણ કારણ આપ્યા સિવાય સ્વીકારવા કે નહીં સ્વીકારવા તેની સંપૂર્ણ સત્તા મ્યુનિસિપલ કમિશનરશ્રીની રહેશે.
૧૧. ટેન્ડરમાં જો કોઈ સુધારા વધારા હોય તો તે અંગે ટેન્ડર ભરતા પહેલાં છેલ્લે દિવસે નિયત વેબસાઈટ ઉપર અથવા કચેરીએ જરૂરી તપાસ કરીને જ ટેન્ડર મોકલવું.
૧૨. ઓનલાઈ એન-પ્રોક્યોર વેબસાઈટ પરથી ભરવાના થતા ટેન્ડરમાં કોન્ટ્રાક્ટર / એજન્સીએ ટેન્ડરની હાર્ડ કોપીમાં ભાવ ભર્યા વગરની સહી સીકકા કરી સબમીટ કરવાની રહેશે. જો તેમાં ભાવ ભરેલ હશે તો તેવા ટેન્ડર રદ કરવામાં આવશે.
૧૩. અ.મ્યુ.કો.ના ઇજનેર ટ્રાફિક પ્રોજેક્ટ દ્વારા શહેરના જુદા જુદા ટી.પી. રોડ ઉપર થર્મોપ્લાસ્ટીક પેઇન્ટ કરાવવા માટે, IRC:35-2015 ગાઈડલાઈન મુજબ MORTH Clause no.: 803.4 પ્રકારનું મટીરીયલ નું જુદી જુદી કંપનીઓ દ્વારા ઉત્પાદન કરવામાં આવે છે, પરંતુ ક્વોલીટીના ધરા ધોરણો મુજબ તેમજ કાયમી એક ધારા મટીરીયલ મળી શકે તે માટે વિશ્વાસપાત્ર કંપનીઓની એપ્રુવડ બ્રાન્ડની બનાવટ વાપરવાની થતી હોઈ, મુખ્ય કંપનીઓની બ્રાન્ડ વાપરવા માટે આર.એ. બનાવી મંજૂર કરાવેલ છે. એપ્રુવડ બ્રાન્ડના નામ આઈટમ સ્પેસીફિકેશન માં દર્શાવેલ છે જે મુજબ સદર કામના કોન્ટ્રાક્ટર પાસે કામગીરી કરાવવામાં આવશે.તેમજ એપ્રુવડ બ્રાન્ડનાં મટીરીયલ નાં ઉપયોગ કરેલ કામગીરી નું અનુભવ સર્ટીફિકેટ તેમજ એપ્રુવડ બ્રાન્ડ ના ઓથોરાઈઝ કર્વેટર નું સર્ટીફિકેટ સામેલ કરવાનું રહેશે.

૧૪. સદર ટેન્ડરમાં જીએસટી અલગથી ચુકવવામાં આવશે તથા અન્ય ટેક્ષ ઇન્કલુડીવ ગણવાના રહેશે, તે મુજબ ગણતરી કરી ટેન્ડરો ભરવાના રહેશે.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer  
(Central Zone)  
Amdavad Municipal Corporation**

## INFORMATION TO TENDERERS

NAME OF WORK:	<b>“Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”</b>
Tender:	Documents with General Conditions and Technical Specifications with BOQ.
1. Estimated tender cost	Rs. 958051.22
2. Earnest Money Deposit	Rs. 9580 to be submitted in the form of D.D. in favor of Municipal Commissioner, Ahmedabad valid for 90 days. It will be release along with final bill.To be Submitted Physically on Date: 24.07.2026 <b>up to 16:00 hrs</b>
3. (A) Security Deposit:	As it is Empanel tender, SD amount 5% will be deducted from each Running Bill and Final Bill of executed amount. It will be released after successfully completion of Defect liability Period.
(B) Solvency Certificate	Solvency certificate for an amount equal to 20 % of the estimated cost of works plus the amount of works on hand still to be executed by him (Tenderer shall submit all the works on hand along with the tenders separately. The bidder shall be solely responsible for providing the correct details. Wrong information shall attract rejection of tender as well as further actions as per the prevailing norms of AMC). A solvency certificate to this effect shall be submitted by him from any Nationalized bank
(C) Retention	<p>Retention @ 2% of the value of work done will be deducted from each RA bill. It will be released along with release of payment of Final Bill.</p> <p>As per MC circular additional 5% amount of the work done shall be hold by AMC till the successful completion of the works. (5% released with final bill.)</p>
4. Mode of sending the Tenders	<p>By RPAD/ Speed Post/ Hand Delivery/ Courier Main Cover Contains envelope 1 Technical Bid and envelop 2 Price bid in duplicate.</p> <p><b>Envelope 1 (Technical Bid) contains:-</b></p> <ul style="list-style-type: none"><li>i) Tender fee</li><li>ii) Bid Security</li><li>iii) Personal Details</li><li>iv) Registration certificate of class</li></ul>

v) Qualification Details.

vi) Hard copy of tender

**Envelope-2 (Price Bid):-**

**To be submitted online only. If submitted physically, the tender shall be rejected outright.**

**i) Tender Specification**

Tender shall be submitted to Assistant Manager, Project, 2nd Floor block-C, Municipal building, Ahmedabad Municipal Corporation, Sardar Patel Bhavan, Danapith, Ahmedabad-380001. on or before Date: 24.07.2026 up to 16:00 hrs

**Special Note:-**

The contractor shall have to submit the tenders in duplicate i.e. two sets- 01 original and 01 duplicate.

All information's / details to be submitted in the given Performa supported by the valid certified & attested duly signed. (Please refer Information Details to be submitted by the tenderers in the Performa mentioned under STATEMENT NO 1 TO 10)

All the physical submission shall be strictly in the form of hard binding only. If not submitted hard bound, contractor is responsible for any ineligibility of tender.

5. Tender validity period: **120 days from the date of opening of price bid of the tender**
6. Time of Completion: **12 months (Excluding monsoon)** from the date of work order.
7. Defect liability period: The Performance Security shall be released on successful completion of defect liability period of **12 months**.

1. **For Thermoplastic Paint:** The defect Liability Period for all the Thermoplastic work shall be considered as for Bumps, Zebra / pedestrian crossing, stop line, letters and arrows: 6 months from the date of execution, for, centre line / cut-patta: 1 Years from the date of execution and for all other Thermoplastic paint: 1 Years from the date of execution. The contractor shall rectify all the defects within this defect liability period including but not limited to peel off of the surface, cracking of the surface. The defect liability period shall be exempted in case of excavations and resurface/patchworks of roads after the execution of the works. The contractor shall check performance parameters for every year on random section conforming to the procedure presented in IRC:35-2015. The performance criteria shall be as per IRC:35-2015 specifically as below.

Table of testing shall be modified for time as follows:

A. For 1 Year DLP :

1. Within 1 week of execution
2. At the end of 6 months
3. Last week period to the end of 1 years

Special note: Failure of each testing and results may attract penalty up to 5% of the thermoplastic work done.

Initial and minimum performance for dry/wet retro reflectivity should be higher than minimum Threshold level. The testing method shall be according to annexure-D, IRC:35-2015. The contractor shall provide all testing instruments during and after the work Nothing shall be paid extra for the same.

The contractor shall be rectifying all defects during defect liability period. The amount will be released after receiving satisfactory report of Engineer in charge. Before completion of defect liability period, contractor shall have to arrange joint visit with Engineer in charge and show total work done.

2. **For Cat Eye/pavement Marker work:** The defect liability period for Cat Eye/pavement Marker work is 1 Years form date of execution.
3. **Retro reflective Sheeting:** A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. DLP of sign board is 1 years.
4. All Other remaining Items defect liability period is 1 year.

The contractor shall be responsible to maintain a register for day to day execution of works item wise duly signed by AMC and Contractor's representatives. The register shall be in the custody of the AMC.

The contractor shall submit the performance bond in the required format as directed by AMC prior to the submission of Final Bills.

8. Compensation for Delay : Liquidated damages for delay in completion of work will be 10% of the amount of remaining work original or extended time limit.

9. Last date of receipt: **Date:23.07.2026 to 18:00hrs (Online)**

10. Water, Electricity: Contractor shall have to make his own arrangements for water and electricity for the purpose of work at site at his own expense.

11. Tenders, which do not fulfill all or any of condition or are submitted incomplete in any respect or are conditional tenders, will be rejected. Municipal Commissioner reserves the rights to reduce/increase the scope of work and contract without assigning any reason thereof.
12. No advance for machinery or materials will be given.
13. Mobilization advance will not be given.
14. Conditional tenders will not be accepted.
15. All taxes shall be deducted from every bill as per the norms of Government rules from time to time.
16. Contractor will be required to produce and submit the original bill/ challan for the material whenever required by AMC.
17. Firm should have completed at least one similar work costing not less than the Rs. 1.6 Cr. of the estimated cost, **or** two similar work costing not less than Rs. 1 Cr. of the estimated



- cost, or three similar work costing not less than Rs. 80 Lac of the estimated cost with good quality and workmanship in the last 7 years.
18. The firm's average annual turnover during the last 3 years ,ending 31<sup>st</sup> March of the previous financial years should be more than 30% of the estimated cost of work.
  19. Tenders which do not fulfill all or any of conditions or are submitted incomplete in any respect will be rejected. Municipal Commissioner Reserves the rights to increase / decrease the scope of work. No any claim to that effect shall be entertained. The Municipal Commissioner also reserves the right to reject any or all the tenders without assigning any reason thereof.
  20. In case of insufficient numbers of bidder, Municipal Commissioner reserves right to waive the eligibility criteria.
  21. A. Guarantees issued by following banks will be accepted as SD/EMD on permanent basis. All nationalized Banks B. Guarantees issued by following banks will be accepted as SD/EMD for the period up to March- 31, 2026. The validity cut-off date in the GR is with respect to the date of issue of Bank Guarantee irrespective of the date of termination of Bank Guarantee.

**1. Commercial Banks :-**

1. Axis Bank
2. A U Small Finance Bank
3. Bandhan Bank
4. BEmpanelmentlays Bank
5. City Union Bank
6. CSB Bank
7. DBS Bank India Limited
8. DCB Bank
9. Equitas Small Finance Bank
10. ESAF Small Finance Bank
11. Federal Bank
12. HDFC Bank
13. HSBC Bank
14. ICICI Bank
15. IDBI Bank
16. IDFC First Bank
17. Jammu and Kashmir Bank
18. Jana Small Finance Bank
19. Karnataka Bank
20. Karur Vysya Bank
21. Kotak Mahindra Bank
22. South Indian Bank
23. Standard Chartered Bank
24. Tamilnadu Mercantile Bank
25. Utkarsh Small Finance Bank
26. YES Bank

**2. Co-operative and Rural Banks Of Gujarat :-**

1. The Ahmedabad Mercantile Co-operative Bank Limited
2. Nutan nagrik Sahakari Bank Limited
3. Rajkot Nagarik Sahakari Bank Limited
4. Saraswat Co-operative Bank
5. SBPP Co-operative Bank
6. SVC Co-operative Bank
7. The Cosmos co-opretive Bank
8. The Gujarat State Co-Operative Bank

9. The Mehsana Urban Co-operative Bank Limited
  10. The Surat District Co-operative Bank
  11. The Surat Peoples Co-operative Bank
  12. The Kalupur Commerical Co-operative Bank Limited
  13. The Panchmahal District Co-operative Bank
  14. The Baroda District Co-operative Bank
  15. Baroda Gujarat Gramin Bank
  16. Saurashtra Gramin Bank
22. Joint venture and subcontracting shall not be allowed under this tender
  23. The EMD and SD to be submitted for the tender shall be as per above list. It shall be noted that the branch of issuing Bank Guarantee /DD shall be of Ahmedabad city.
  24. For Thermoplastic paint/Cat eye/ spring post/Median marker work the bidder shall start work within period of 10 days from the date of intimation. In case of emergency, the contractor shall have to make arrangement in 24 to 48 hours after receiving intimation by E-mail or Phone or telephonic message or both. The failure to start work in such specified time shall attract a penalty of Rs.1000/day delay after the period allotted.

### **Additional Instructions to persons tendering**

#### **1. DETAILS OF WORK**

The work included in this contract shall be carried out in accordance with the specification, rules and regulations as laid down in the books mentioned below in order of the priority.

- (1) Specification for roads and bridge works Ministry of Surface Transport, 5th Revision,
- (2) Relevant I.S.-and IRC specified in specifications of item.
- (3) P.W.D. Hand Book Vol. I and II.

#### **2. PROGRAMMING**

The Engineer may at any time give direction as to the order and manner in which the several parts of the work shall be carried out. The contractor shall strictly observe such directions.

3. The contractor shall at all time be responsible for any damage and trespass committed by his agent and working people in carrying out the work unless such trespass is authorized by the Engineer.

#### **4. PERMIT & LICENSES**

The contractor shall procure at his sole expenses all permits and license and pay all charges and fees for law full execution of the work.

#### **5. TEMPORARY QUARTERS**

The contractor will be required to make his own arrangements for the housing of all his staff and work people during the execution of the work including satisfactory provision. The contractor shall maintain at his own expenses efficient staff as may be required by the Engineer-in-charge. Suitable fire preventive measure to the satisfaction of the Engineer in charge shall be taken by the contractor.

6. All unused materials and all plants and equipments not removed by the contractor within 15 days of the completion date of the works or any extension granted thereof by the Engineer shall become the property of the Ahmedabad municipal corporation and the contractor shall not be entitled to any payment or compensation whatsoever in respect thereof.

**7.** Condition regarding medical and sanitary arrangements to be provided for labour employed in the construction by the contractor.

(a) The contractor shall follow rules regarding medical and sanitary arrangements to be provided in labour camps as mentioned in tender and as per rules in force and amended from time to time.

(b) The contractor shall make arrangements for all anti malaria measures to be provided for the labour employed on the work. Anti-malaria measures shall be directed by the Public Health of local authority.

## **8. INSPECTION OF WORK & MATERIALS**

(1) For Engineer (AMC) and its representatives, Agent and employees of the contractor, contractor shall provide safe and proper facilities.

(2) The inspection of the work shall not relieve the contractor of his obligations to fulfill the terms of the contract as herein prescribed by the plans and specifications.

(3) The contractor shall furnish the Engineer with every reasonable facility and assistance for ascertaining whether or not the work performed is in accordance with the requirements if so directed, the contractor at any times before and after acceptance of the work removes or uncovers any portions of the finished works considered, necessary for fresh inspection at his own. After the inspection, the contractor shall restore the said portion of the work to the condition required by the specification at his own cost.

(4) Failure to reject any defective work of materials at any time will not in any way prevent later rejection when such defect is discovered or obligate the Department to the final acceptance.

**9.** All petty items accruing in the work and as found necessary in actual execution shall be carried out in general as per P.W.D. Hand Book Volume-I & II (latest edition) and as per General Specifications and as per orders of the Engineer from time to time.

**10.** The contractor shall provide all labour and pegs, strings and other materials, as required for lining and measuring all the work without any payment from AMC.

**11.** All the materials to be used in the work may be from time to time subject to tests as per relevant standards/ I.S. as decided by the Engineer.

**12.** Notwithstanding that all proper precautions, may have been taken by the contractor at all times during the progress of the work. The contractor shall be held responsible for the damages, whether to the work under execution or to any other property or persons during the progress of work and the period of maintenance.

**13.** The board stating the detailed specifications and details of work as per Current circular of amc/Government Circular No.TNC-1090-24-S, Dated 17-08-2002, should be erected as directed on the site of work by the contractor without claiming extra for the same.

## **SPECIAL CONDITIONS**

### **1. APPLICABLE IN CASE OF BOTH ROAD AND BRIDGE WORKS**

#### **1. Construction Equipment:**

1.1 The methodology and equipment to be used on the project shall be furnished by the contractor to the Engineer well in advance of commencement of work and approval of the Engineer obtained prior to its adoption and use.

1.2 The contractor shall give a trial run of the equipment for establishing its capability to achieve the laid down specifications and tolerance to the satisfaction of the Engineer before commencement of work, if so desired by the Engineer.

1.3 All equipment provided shall be of present efficiency and shall be operated and maintained at all times in a manner acceptable to the Engineer.

1.4 No equipment or personnel will be removed from site without permission of the Engineer.

#### **2. Work programmed and methodology of construction:**

The contractor shall furnish his programmed construction for execution of the work in within the stipulated time schedule together with methodology of construction of each time of work and obtain the approval of the Engineer prior to actual commencement of work.

#### **3. Revised programmed of work in case of slippage.**

In case of slippage from the approved work programmed at any stage, the contractor shall furnish revised programmed to make or the slippage within the stipulated time schedule and obtain the approval of the Engineer to the revised programmed.

#### **4. Action in case of disproportionate progress:**

In case of extremely poor progress of the work or any item at any stage of work which in the opinion of the Engineer, cannot be made good by the contractor considering his available resources, the Engineer will get it accelerated to make up the lost time through any other agency and recover the additional cost incurred, if any, in getting the work done from the contractor after informing him in writing about the action envisaged by him. The action may include blacklisting of the contractor based on the works and severity and decision of Municipal Commissioner shall be binding in this condition.

#### **5. Setting out:**

Setting out the work as spelt out in of Ministry Specifications for Road and Bridge work (5th Revision) will be carried out by the contractor.

#### **6. Arrangement for traffic during construction:**

Action for arrangement for traffic construction will be taken by the Contractor as envisaged in the contract documents and spelt out in works (5<sup>th</sup> Revision).

#### **7. Quality Control :**

The onus of achieving quality of work will be on the contractor who will take as stipulated in Ministry's Specifications for Road and Bridge works. (5th Revision).

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**

(Central Zone)

Ahmedabad Municipal Corporation

***Information / Details to be submitted by the Tenderers in the Performa  
mentioned under Statement no 1 to 10***

**STATEMENT NO-1**

**DECLARATION**

I/We hereby declared that I/We am/are not partner(s) blacklisted or connected with firm blacklisted in any states, CPWD / MES / Railways or any Government, Semi-Government or Private body.

At present I/We am/are registered as approved contractor (s), firms in any state, CPWD / MES / Railways.

We, the partners/owners of this firm, hereby give an undertaking that we are jointly and severally responsible to meet all the liabilities ever and above the business of this firm and make good the above financial loss sustained by the Ahmedabad Municipal Corporation as a result of out abandoning the works entrusted to us.

I / We further declare that my / our near relatives are not working in AMC as an Addl. C.E., Dy. C.E., A.C.E., A.E., T.S. as on today.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

## **STATEMENT NO-2**

### **APPLICABILITY OF PROVIDENT FUND AND MISCELLANEOUS PROVISIONS ACT 1952**

Successful bidder i.e. the agency whose tender is accepted by the AMC shall have to comply the necessary formalities under the employees provident fund and Miscellaneous Provisions Act, 1952 as Contributory Provident Fund Scheme is applicable to labourers engaged in construction activity and shall have to submit proofs regarding deduction of provident fund and other dues and depositing the same with government department under the act and the scheme regularly on monthly basis failing which no running / final bill payment will be made by the AMC to the contractor in any circumstances.

**A certificate to the above effect has to be given by the contractor as under.**

### ***Declaration Of Depositing Provident Fund contribution***

This to certify that we have deducted the employees' P.F. and deposited the same along with employer's contribution towards provident fund on labour charges / wages paid by us to the labourers engaged for the work of \_\_\_\_\_ with Provident Fund Authority under our Provident Fund Code No. \_\_\_\_\_

We produce herewith the copies of the challans for the provident fund deduction and contribution deposited as mentioned above.

***Note: This certificate is not necessary, if the numbers of employees are more than 20 than it may be submitted by contractor.***

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer  
(Central Zone)**

Ahmedabad Municipal Corporation

**STATEMENT NO. -3**

**CURRICULAM VITAE**

<b>Sr.No.</b>	<b>Details of person</b>		
1.	Name		
2.	Age		
3.	Qualifications		
4.	Experience in Project Related field		
5.	Other experiences		
6.	Employment Record.		
<b>Sr.No.</b>	<b>Period From - To</b>	<b>Organization under which work</b>	<b>Status /position in the organization</b>



**Note:**

- (1) Separate sheet for each person to be furnished as above.
- (2) The contractor's Project Team should consist of persons in the following disciplines.
  - a) Senior Engineer with experience of Building/road/Traffic work
  - b) Site Engineer.
  - c) Quantity Surveyor.
  - d) Site supervisor (technical).
  - e) Site in charge

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)

Ahmedabad Municipal Corporation



**STATEMENT – 4**

**INFORMATION REGARDING FINANCIAL CAPACITY OF THE CONTRACTORS.**

Sr. No.	Details	Amount (Rs. in Lacs)	Remarks
1.	Solvency	.	A Banker's Certificate may please be attached.
2.	Annual Turnover for the last five years.		
3.	Price of biggest (Traffic Engineering) job carried out		

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**

(Central Zone)

Ahmedabad Municipal Corporation

**STATEMENT NO. – 4/A**

**BIDDER'S FINANCIAL CAPACITY**

<b>Sr. No.</b>	<b>Financial Year</b>	<b>Annual Turnover in Engineering Project Rs.</b>	<b>Net worth Rs.</b>	<b>Net Cash Rs.</b>
<b>1</b>	<b>2025-26</b>			
<b>2</b>	<b>2024-25</b>			
<b>3</b>	<b>2023-24</b>			
<b>4</b>	<b>2022-23</b>			
<b>5</b>	<b>2021-22</b>			

**Note:-**

- 1) *Figures to be taken from audited balance sheets.*
- 2) *Copies of the balance sheet to be attached..*
- 3) *The bidder shall have to provide that for a period of at least 4 months the bidder has ability to sustain negative cash balance and how he proposes to meet with the same.*
- 4) *Cash Plan / Cash flow Statement.*

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**STATEMENT NO. – 4 / B**

**AVAILABLE BID- CAPACITY**

	2025-26	2024-25	2023-24	2022-23	2021-22
Value of works executed in Rs. Lakhs.					

The available bid capacity will be worked out as follows.

**Bidding capacity= (A\*N\*2)-B = \_\_\_\_\_ (to be filled by Applicant)**

**A**= Maximum value of works execute in any one year during the last 5 years, update to current price level.

**N**= Number of years prescribed for completion of the works for which PQ has been invited.

**B**= Value of existing commitments and on going works to be completed during the period of completion of work for which PQ has been invited.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**STATEMENT NO. – 5**

**LIST OF TRAFFIC PROJECT WORK OF NOT LESS THAN 40% OF THE ESTIMATED  
COST COMPLETED DURING THE LAST SEVEN YEARS.**

Sr. No.	Year of Construct- ion work	Name of Project	Name of owner & contact person of the project, address, phone no. fax no.	Total cost of the work	Total value of work done Rs.	Date of starting work	Date of Actual completion of work
1		2	3	4	5	6	7
1) 2) 3) 4) 5) 6) 7) 8) 9) 10)							

*Note: Certificate from the owners in support of above works may be enclosed with this statement.*

***NOTE: All the works mentioned in above statement must have at least one item either of Cat Eye or Thermoplastic paint or Signage***

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**STATEMENT NO. 5/A**

**Detailed information of similar type of traffic construction work costing not less than tender amount completed with good quality and workmanship in the past seven years.**

Name of Contractor: \_\_\_\_\_

Sr. No.	Name of work	Name of client	Estimated cost of work (Rs. Lacs)	Tendered amount Rs. (Lacs)	Date of award of contract	Target date of completion	Actual date of completion	Reason for delay	Amount of work done during last five years preceding this tender (Rs. Lacs).					Amount of work done after March 2024 (Rs. Lacs)	Remarks
									2021-22	2022-23	2023-24	2024-25	2025-26		

*Note: Certificate from the owners in support of above works may be enclosed with this statement.*

***NOTE: All the works mentioned in above statement must have atleast one item either of Cat Eye or Thermoplastic paint or Signage***

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**STATEMENT NO – 5/B**  
**DETAILS OF IMPORTANT TRAFFIC PROJECTS**

Sr. No.	Name of Project	Estimated cost Rs.	Prescribed time of performance		Actual Completion		Actual Completion Cost Rs.	Name, address and Telephone/Fax Nos of Client/Contact person.
			Start Date	Completion Date	Start Date	Completion Date		
1	2	3	4	5	6	7	8	9
1) 2) 3) 4) 5) 6) 7) 8) 9) 10)								

*Note: Certificate from the Employers in support of above works may be enclosed with this statement.*

***NOTE: All the works mentioned in above statement must have atleast one item either of Cat Eye or Thermoplastic paint or Signage or Benches***

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
 (Central Zone)  
 Ahmedabad Municipal Corporation

**STATEMENT NO. – 5/C**

**DETAILS OF ONGOING PROJECT AS ON YEAR 2026-27**

Sr. No	Name of project	Value of remaining work on Current month	Start date	Likely date of completion	Name, address, telephone, fax no. of project authority and contact person.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)

Ahmedabad Municipal Corporation

**STATEMENT NO. – 6**

**CONTRACT LOST BY PARTY EVEN WHEN CONTRACTOR'S PRICE IS LOWEST (IN INDIA)**

Sr. No.	<i>Details of Project</i>	Actual contract Period (start date– end date )	Reasons for rejection known to the bidder	Remarks by the bidder on his rejection	Name, address, phone and fax no of the owner's representative who could be contacted

*Note: The bidder shall furnish separate table for individual project.*

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation



**STATEMENT NO. – 7**

***DETAILS OF COMPLETED / ONGOING LITIGATION / ARBITRATION***

<b>Sr. No.</b>	<b><i>Name of Project</i></b>	<b>Period of Execution</b>	<b>Value of the Project Rs.</b>	<b>Reasons/Details for litigation/arbitration</b>
<b>1.</b>				
<b>2.</b>				
<b>3.</b>				
<b>4.</b>				
<b>5.</b>				
<b>6.</b>				
<b>7.</b>				
<b>8.</b>				
<b>9.</b>				
<b>10.</b>				

**Note:** *The bidder shall furnish separate table for individual project.*

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**STATEMENT NO.-8**

**DETAILS OF PLANT & MACHINERY TO BE DEPLOYED ON THIS WORK**

Name of the contractor/company\_\_\_\_\_

<b>Sr. No</b>	<b>Name of plants/machinery</b>	<b>Nos. available (with make &amp; year)</b>	<b>Nos. proposed to be deployed for this project</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Pre heat boiler		
2	Applicator Machine		
3	Various size of dye		
4	Pick Up Van		
5	Tractor		
6	Tractor Trolley		
7	Water Tanker		
8	Hand Cart		
9	Drill Machine		
10	Mini Crane		
11	Mixer Machine big		
12	Mixer Machine Small		
13	Welding Set		
14	Gas cutting		

The equipments, which are owned/procured/hired and can be useful in good condition for this project only to be mentioned in the above.

***Note :Equipments/Plant / machineries which are proposed to be provided shall have to be procured/hired at the earliest after award of the work and before the start of the work. It is not mandatory contractor is having all type of equipment, plant and machineries. The list of available and planned (along with proposed date of procurement) machineries be provided by the contractor.***

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

## **STATEMENT NO. 9**

### **METHOD STATEMENT AND WORK PLAN**

The Bidder shall have to provide a brief write up to be enclosed with the “Technical Bids” covering his approach and methodology to handle the project construction activities including his details work plan. The brief shall include the following aspects.

<b>Sr. No.</b>	<b>Components</b>	
1.	Methodology	
2.	Construction equipment availability and plan of deployment.	
3.	PERT / Construction chart / Bar chart.	
4.	Availability of number labor gangs for different types of works under this tender	

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**STATEMENT NO. 10**

કોન્ટ્રાક્ટર દ્વારા કોઈપણ વધારાના ચાર્જ વગર રેટ્રોરીફ્લેક્ટીવ **Type-XI** માં શિટમાં લગાવવાના થતા બોર્ડ ની વિગત (મિનીમમ – ૪બોર્ડ)(અક્ષરોની મિનીમમ સાઈઝ ૫૦ મી.મી રાખવાની રહેશે.)

પરિશિષ્ટ

અમદાવાદ મહાનગર પાલીકાના રૂ લાખથી વધારે કિંમતના ટ્રાફિક ખાતાના કામની વિગત પ.દર્શાવતા બોર્ડ :-

૧	કામનું નામ	
૨	વિભાગનું નામ	
૩	પેટા વિભાગનું નામ	
૪	ટેન્ડરની રકમ	
૫	ઈજારદારશ્રીનું નામ	
૬	સુપરવાઈઝરી સ્ટાફના નામ	
૭	કામ શરૂ કરવાની તારીખ	
૮	કામ પૂર્ણ કરવાની તારીખ	
૯	કામના સ્પેશીફિકેશન	
૧.	થમોપ્લાસ્ટીક પેઇન્ટ (ચો.મી)	
૨.	કેટ આઈ (રેઈઝડ પેવમેન્ટ માકેર) (નંગ)	
૩.	કીપ લેફ્ટ બોલાડે (નંગ)	
૪.	ટ્રાફિક સાઈન બોર્ડ, (નંગ)	
૫	ડાયરેક્શન સાઈન બોર્ડ (નંગ)	
૬	એનેમલ પેઇન્ટ(ચો.મી)	
૭	મીડીયન માકેર (નંગ)	
૮	ટ્રી ગાર્ડ સાઈનેજ (નંગ)	
૯	આ ટેન્ડર હેઠળના રસ્તાઓની વિગત	

આ કામના વિગતવાર સ્પેશીફિકેશન એડી સીટી ઇજનેર.(ટ્રાફિક) વિભાગની કચેરીએ ઓફિસના સમય દરમિયાન કોઈપણ સમયે જોઈ શકાશે.

આ કામની માલિકી જાહેર જનતાની છે અને કામમાં કોઈપણ ક્ષતી કે અનિયમીતતા જણાય તો તે બાબતમાં સંબંધિત ઇજનેરશ્રી એડી સીટી ઇજનેર.(ટ્રાફિક) કે જેઓની કચેરી અમદાવાદ મ્યુનિસિપલ કોર્પોરેશન,બીજો માળ,જુના બીલ્ડીંગ, પ.વ.એ.ની બાજુમાં છે તેઓનું ધ્યાન દોરવા વિનંતી છે.

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

## ***Tender Declaration form***

To  
Addl City Engineer (Central Zone)  
Ahmedabad Municipal Corporation  
Ahmedabad.

**Project: : “Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”**

Dear Sir,

I/We the undersigned have carefully gone through and clearly understood the Tender documents of above mentioned project comprising of Notice Inviting tenders, Articles of Agreement, Scope of work, Definition of terms, notes Instructions/Information to Tenderer, Condition of Contract, special condition of contract, Appendices, Specifications, Schedule of quantities and tendered drawings furnished by AHMEDABAD MUNICIPAL CORPORATION. I/We have satisfied myself/ourselves as to the location of site, examined drawings. I/We have visited site & fully acquainted with local situations regarding materials, labours & others factors pertaining to work before submitting tenders.

I/We do hereby offer to execute and complete the whole of the work within the time specified all in accordance with the specification, designs, drawing and instruction in writing referred to in the said document and with such materials as are provided for, at the respective rates which I/we have quoted in the schedule-B or at such other rates as maybe fixed under the provisions of these conditions.

In the event of this tender being accepted I/We agree to enter into an agreement and when required and execute the contract, according to your form1 of agreement as or in default where of I/we bind myself/ourselves to forfeit the "Earnest Money Deposit."

I/We understand that if I/WE shall not enter in agreement within ten days or decided by AMC from the date of receipt of letter of acceptance, you will forfeit the earnest money paid by me/us and take necessary action as deemed fit.

I/We have enclosed a Demand Draft / Bank Guarantee as an “Earnest Money Deposit”, for the sum as mentioned in NIT, the full value of which is to be absolutely forfeited to the Employer If I/We fail to commence the work specified. Otherwise the Employer shall retain the said sum, as on account of such. Security Deposit as provided for in the aforesaid documents.

I/We agree not to employ Sub-contractors other then those that may be approved in accordance with Conditions in the aforesaid documents.

I/We understand that Municipal Commissioner is not bound to accept the lowest or any tender, which are received.

I/We am/are bound to execute the job if the work order is issued within 180 days from the date of submission of the tender.

I/We agree and understand that I/We shall be allotted only 1(One) similar works in case of competition.

I/We agree to pay the Government income-Tax, GST, Sales-Tax (North and State) Sales Tax on work consult, labour cess, education cess, octroi duties and any other taxes prevailing from time to time on such items on which the same are leviable and the rates quoted by me/us are inclusive of the same.

Date:

Yours faithfully

**Seal and Signature of the Bidder**

**Date:**

**GOVERNMENT VERNACULAR CIRCULAR**  
**NO.SSR 1097/A/81/KH DATED 05.09.1988**

The rates for traffic items material and labours on work site are to be filled up for the items given in Appendix “A” attached herewith. The agreement letter which is attached herewith has to be submitted duly signed. If the rates are abnormally low/high the classification will have to be given within a period of 10 days after issuance of the letter without taking into consideration the estimate rates of the year.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**LETTER OF AGREEMENT**

The Rate Analysis given in Appendix is not binding to the Department. Also if materials as mentioned of special courses, if not available as per specifications then in that case we will bring in good quality of materials as approved by the Department from the other source of supply. We will not claim any compensation thereof.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**SPECIAL NOTE**

Clause: 1

No contractor shall employ any child below age as prohibited by child labour regulation act-1986. Hon. Supreme Court has given certain guide lines and as per guide lines, if employment is detected on the site of work, the contractor shall have to deposit Rs. 20,000/- (Rupees twenty thousand only) in the welfare fund.

If the employer refuses to deposit then action will be taken for contempt of court of Supreme Court judgment and prosecuted by concern authority. Because of the breach of any provision child prohibition and Regulation Act-1986 by the contractor and for the Corporation has to pay any amount then the Municipal Corporation shall recover the said amount from the contractor.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)

Ahmedabad Municipal Corporation

**DECLARATION**

I / We hereby declare that I / We have visited the site and fully acquainted myself / ourselves with the local situations regarding materials, labour and other factors pertaining to the work before submitting this tender.

I / We hereby declare that I / We have carefully studied all the terms and conditions of contract, specifications mentioned in the tender documents and I / We do agree for compliance with the same strictly.

I/We shall execute the contract agreement with the AMC after award of work and before start of work.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)

Ahmedabad Municipal Corporation

**CERTIFICATE**

I/We certify that I/We have inspected the location of the proposed work before quoting my/our rates.

I/We have also inspected the quarries and borrow areas and satisfied myself/ourselves regarding the quality, quantity, availability and transport facilities for Retro reflective sheeting, structural steel, earth, stone, bricks, and, cement etc. through the network of available roads and path ways required for the work.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)

Ahmedabad Municipal Corporation



## **FORM 1**

### **General information**

All individual firms must complete the information in this form. Nationality information shall be provided for all owner(s) or applicant(s) that are partnership or individually owned firms.

1 Name of firm:

2 Head office address:

.....  
.....

3 Local office address (if any):

.....  
.....

4 Telephone/ Contact:

5 E-mail address:

6 Place of incorporation/registration:

7 Year of incorporation/registration:

- additional information regarding litigation, debarment, arbitration, etc.
- affidavit.

Sign of the Contractor

Seal of the Contractor

**AHMEDABAD MUNICIPAL CORPORATION**  
**INVITATION FOR BIDS (IFB)**

1. The AHMEDABAD MUNICIPAL CORPORATION, (hereinafter called "the Employer") invites sealed Tender document from reputed and qualified bidders for the construction of Works detailed in the Table below:-

Sr. No.	Name of Works	Approximate value of works (Rs.)	Bid Security (Rs.)	Completion Period
1	"Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)"	Rs.4,10,69,998.40/-	Rs.1,00,000 /-	12 months (Excluding monsoon)

2. Tender (a complete set of bidding document) fee shall be Rs 6000/- in the form of Demand Draft from any Nationalised Bank in favour of MUNICIPAL COMMISSIONER, Ahmedabad, payable at Ahmedabad, which shall be non refundable. The fees shall be paid at the time of submitting the tender.

3. Interested bidders shall download the tender documents from AMC's website **www.nprocure.com** up to **Dt.23.07.2026, 17.00 Hrs** tender fee as mentioned in clause 2 above shall be paid by the bidder at the time of bid submission.

4. All bids must be accompanied by Bid Security of the amount specified for the Works in the above Table payable at Ahmedabad and drawn in favor of AHMEDABAD MUNICIPAL CORPORATION, Ahmedabad. Bid Security will have to be in any one of the forms as specified in Clause 17 of ITB (Instructions to Bidders).

5. All Bids must be submitted online as well as hardcopy shall be delivered to Assistant Manager (Project), 2nd Floor, C-block ,P.W.A office, Municipal building, Ahmedabad Municipal Corporation, Sardar Patel Bhavan, Danapith, Ahmedabad-380001 not later than 16:00 hrs on **Dt.24.07.2026. The financial bid shall be submitted online only.**

6. The Bids will be opened at **17:00 hrs on Dt. 24.07.2026** at the office of Addl.City Engineer (Central Zone), Ahmedabad Municipal Corporation, Sardar Patel Bhavan, Danapith, Ahmedabad-380001 in the presence of bidders or their representatives who choose to attend. In the event of the specified date of bid submission/ opening being declared a holiday for the Employer, the bids shall be received / opened on the next working day at the same place and the same time.

## **AHMEDABAD MUNICIPAL CORPORATION**

### **Section I – INSTRUCTIONS TO BIDDERS (ITB)**

#### **A. General**

##### **1. Scope of Bid**

1.1 The Ahmedabad Municipal Corporation hereinafter called "the Employer" invites Tender document for the construction of works (as defined in these documents, hereinafter referred to as "the Works") detailed in the table given in the IFB.

##### **1.2 “Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”**

1.3 The works under this Contract shall be carried out in accordance with the bidding documents constituting the contract and shall consist of various salient items as generally described below:

##### **1.4 Hot applied thermoplastic painting work**

- A) Cleaning of Road Surface with Brush or Machine
- B) True and proper setting out and layout of the Works, provisions of all necessary labor, instruments, and appliances;
- C) Providing road markings, road signs; with all necessary test certificates.
- D) Environmental measures.
- E) Repainting of worn out, peeled off or cracking of the surface or blackening of road markings on different roads and junctions for two year from the date of execution of the works.
- F) The contractor shall maintain a register for day to day works duly signed by AMC and Contractor's representatives. The register shall be kept in the custody of AMC.
- G) Before starting the actual work on site, the contractor shall survey the works proposed, submit the details accordingly and the scheme shall be approved from AMC. The survey shall be started right from the issuance of the work order and the survey work and submission of the scheme shall be got approved within one month of the issuance of the work order. The work shall be executed as per the approved scheme only. Else the work shall be re-executed at no extra cost by contractor.
- H) The contractor shall submit the colored photos (in soft as well as hard copies) before and after the execution of works having the date and time at no extra cost prior to the demand of running/final bills also as and when asked by AMC.

##### **1.5 The Works consist of:**

- (a) Removing of damaged R.C.C. bollards/bollard/signage/cat eye/dustbin/benches from the site and transporting the same as per the direction of Engineer In Charge at no extra cost.
- (b) Providing & fixing of bollard/signage/cat eye/dustbin/benches as per direction of engineer - in-charge.
- (c) Removing surplus materials, debries & clear the work site. Upto all leads and lifts as directed by Engineer In Charge.
- (d) Providing proper road signs on the roads during the work.

- (e) Environmental measures as per current laws and amendment if any from time to time.
- (f) The contractor shall maintain a register for day to day works duly signed by AMC and Contractor's representatives. The register shall be kept in the custody of AMC.
- (g) Before starting the actual work on site, the contractor shall survey the works proposed, submit the details accordingly and the scheme shall be approved from AMC. The survey shall be started right from the issuance of the work order and the survey work and submission of the scheme shall be got approved within one month of the issuance of the work order. The work shall be executed as per the approved scheme only. Else the work shall be re-executed at no extra cost by contractor.
- (h) The contractor shall submit the colored photos (in soft as well as hard copies) before and after the execution of works having the date and time at no extra cost prior to the demand of running/final bills also as and when asked by AMC.

#### **1.6 Painting Work**

- A) The surface to be painted shall be thoroughly cleaned and made dust free.
- B) The materials required for work of painting work shall be obtained directly from approved manufacturers and shall be kept properly protected. The standard workmanship shall be adopted as per the Manufacturers manual. Test/Batch Certificate to be attached alongwith Manufacture Manual.
- C) Providing proper road signs on the roads during the work. Ensuring all the safety measures as per the standard practices.
- D) Environmental measures.
- F) The contractor shall maintain a register for day to day works duly signed by AMC and Contractor's representatives. The register shall be kept in the custody of AMC.
- G) Before starting the actual work on site, the contractor shall survey the works proposed, submit the details accordingly and the scheme shall be approved from AMC. The survey shall be started right from the issuance of the work order and the survey work and submission of the scheme shall be got approved within one month of the issuance of the work order. The work shall be executed as per the approved scheme only. Else the work shall be re-executed at no extra cost by contractor.
- H) The contractor shall submit the colored photos (in soft as well as hard copies) before and after the execution of works having the date and time at no extra cost prior to the demand of running/final bills also as and when asked by AMC.

#### **2. Source of Funds**

- 2.1 The expenditure on these Works will be met by AHMEDABAD MUNICIPAL CORPORATION.

#### **3. Eligible Bidders**

- 3.1 This invitation for bids is open to bidders who has necessary bid capacity and who meet the following requirements:
  - A bidder shall not be under a declaration of ineligibility for corrupt or fraudulent practice.
  - The bidding capacity of the Applicant has to be equal to or more than the cost of the work. The bidding capacity shall be worked out as per statement no 4/B.
  - The bidders shall have a registration with State PWD, and/or CPWD/AMC for “E-1” class If contractor is not registered with AMC in the relevant class, on award of contract he shall be required to register himself with AMC within 3 month's time and prior to claim of First running bill.

- The contractor shall have to submit the on going works on hand as well as proposed works for which he has been allotted the work order at all departments and private as well.
- Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.

As per the qualification criteria as mentioned in subsequent clause.

**4. Eligible Material, Equipment and Services**

4.1 At the Employer's request, the bidder having offered the lowest evaluated financial bid may be required to provide evidence of the origin of materials, equipment, and services to the satisfaction of the Employer within the time as specified by the Employer. All the materials shall confirm to respective IRC.

4.2 For purposes of Sub Clause 4.1, "origin" means the place where the materials are mined, grown, produced or manufactured; similarly for equipments and from where the services are provided.

**5. Qualification of the Bidder**

To be qualified for award of Contract, bidders shall:

- a) Submit a written power of attorney authorizing the signatory of the bid to commit the bidder; and

**FORM 1**

**General information**

All individual firms must complete the information in this form. Nationality information shall be provided for all owner(s) or applicant(s) that are partnership or individually owned firms.

1 Name of firm:

2 Head office address:

.....  
 .....

3 Local office address (if any):

.....  
 .....

4 Telephone/ Contact:

5 E-mail address:

6 Place of incorporation/registration:

7 Year of incorporation/registration:

- additional information regarding litigation, debarment, arbitration, etc.
- affidavit.

Sign of the Contractor

Seal of the Contractor

### **5.3 Disqualification**

- a) Even though the Applicants meet the required criteria, they are subject to be disqualified if Applicant or any of its constituent partner/s, director/s have: - Made misleading or false representation in the forms, statements, and attachments submitted; or - Been debarred or terminated or blacklisted by North Govt. organization / State Govt. organization / AMC / Any Municipal Corporation / ULBs etc.
- b) If, any of the directors, partners or the proprietor has a criminal history or has been convicted by any court of law for any of the offenses under any Indian laws.
- c) If, any criminal proceeding is pending in any court of law in India against any of the directors, partners or a proprietor and if any such proceeding culminates into conviction

### **5.4 Debarment/Black listing**

Notwithstanding the above, the Employer may debar or blacklist any of the bidder(s) for their misleading or false representations in the forms statements etc. for the period to be decided by the Employer.

## **6. One Bid per Bidder**

- 6.1 Each bidder shall submit only one bid per contract package either by himself or as a partner in a joint venture. A bidder who submits or participates in more than one bid for a contract package will be disqualified.

## **7. Cost of Bidding**

- 7.1 The bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will in no case be responsible or liable for those costs.

## **8. Site Visit**

- 8.1 The bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the bidder's own expense.
- 8.2.1 The bidder and any of its personnel or agents will be granted permission by the Employer to enter its premises and lands for the purpose of such inspection, but only upon the express condition that the bidder, its personnel and agents, will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of the inspection.

## **B. Bidding Documents**

### **9. Contents of Bidding Documents**

- 9.1 The bid shall be considered as a set of bidding documents listed below:

#### **9.2 Document**

**Volume:- 1:-**

**TENDER NOTICE  
INFORMATION TO TENDERERS  
STATEMENT AND FORMS  
INVITATION FOR BIDS (IFB)  
Section I – INSTRUCTIONS TO BIDDERS (ITB)**

**Section II - CONDITIONS OF PARTICULAR APPLICATION**

**Section III FORM OF BID AND APPENDIX TO BID**

**Section IV FORMS**

**Section V TECHNICAL SPECIFICATION**

**Volume:-2:- (Price bid)**

**Section VI Bill of Quantities (BOQ)**

- 9.3 The bidder is expected to examine carefully the contents of all the above bid documents. Failures to comply with the requirements of bid documents will be at the bidder's own risk. Pursuant to Clause 26 and 28, bids which are not substantially responsive to the requirements of the bidding documents will be rejected.

**TENDER DOCUMENTS  
VOLUME-I (TECHNICAL BID)  
VOLUME – II (PRICE BID)**

Copy of the tender Document should be completed, legible in ink or ball pen, checked in a responsible manner, signed, stamped and returned together with the tender security bond by the stipulate date. This shall form the part of tender documents which the tenderer is required to complete.

The form of tender, including the Appendices enclosed thereto, Tender security bond and the Tender summary shall be submitted duly signed and stamped.

All the pages in which entries are required to be made by the tenderer are contained in the tender documents and the tenderer shall not take out or add to or amend the text of any of the documents except in so far as may be necessary to comply with any issue pursuant to Clause IT .19 hereof

**C. Preparation of Bids**

**12. Language of Bid**

- 12.1 The bid, and all correspondence and documents related to the bid exchanged between the bidder and the Employer shall be written in the English language. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language, in which case, for purposes of interpretation of the bid, the English translation shall prevail.

**13 Documents comprising the Bid**

The bids shall be submitted in hard copy and two copies, one marked as “original” and other marked as “Duplicate”, both of which comprise the following documents:-

**Tender Document: Part-I Technical Bid**

- i) Tender fee and Bid Security for an amount as specified in the Invitation for Bids (IFB).

- ii) Power of Attorney
- iii) Information as specified.
- iv) Any other material / information required to be submitted in accordance with these Instructions to Bidders (ITB).
- v) Forms ( Qualification criteria as per statement 1 to 9)
- vi) Hard copy of tender.

**The Technical Bid shall be hard bound and all pages machine numbered. Bid security shall be furnished in “Original” set of Technical Bid.**

**Part-II Financial Bid :**

Volume II of the Bid consisting

- i) Priced Bill of Quantities -

**The Financial Bid shall be submitted online only.**

Each part shall be separately sealed and marked in accordance with the sealing and marking.

**In case of any ambiguity the “Original” set of document shall prevail.**

13.2 The bidder shall prepare and submit **two copies** of the bid.

**14. Bid Prices**

14.1 Unless stated otherwise in the bidding documents, the Contract shall be for the whole Works as described in bidding documents, based on the percentage rate amount in the Bill of Quantities submitted by the bidder.

14.2 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause as of the date 28 days prior to the deadline for submission of the bids, shall be included in the rates and prices and the total bid price submitted by the bidder and the evaluation and comparison of bids by the Employer shall be made accordingly. **The Rates quoted Excluding applicable G.S.T. as per rules.**

**15 Currencies of Bid and Payment**

15.1 The rates and the prices shall be quoted by the bidder entirely in Indian Rupees

15.2 All payments shall be made in Indian Rupees.

**16. Bid Validity**

16.1 Bids shall remain valid for a period of 180 days (one hundred eighty days) after date of opening of price bid. The Employer as non-responsive shall reject a bid valid for a shorter period.

16.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request the bidders to extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing or by fax or by e-mail. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid but will be required to extend the validity of his Bid Security for the period of the extension, and in compliance with Clause 17 in all respects.



## **17. Bid Security**

17.1 The bidder shall furnish as part of its Bid, a Bid Security in the amount as stipulated in the Invitation for Bid (IFB) for particular work(s). The Bid Security shall be drawn in favor of MUNICIPAL COMMISSIONER, Ahmedabad, and may be in one of the following forms:

- a) Bank Guarantee from any Nationalized or RBI approved foreign bank having net worth of more than Rs.500 crore of Indian operation and acceptable to Employer.

The format of Bank Guarantee shall be in accordance with the sample form of Bid Security included in the bid document. If submitted in the form of Bank Guarantee, the issuing branch of the same shall be of Ahmedabad City only.

- b) Demand Draft / pay order of any Nationalized Bank in favour of Municipal Commissioner, Ahmedabad.

17.2 Bank guarantees (and other instruments having fixed validity) issued as surety for the bid shall be valid for 28 days beyond the validity of the bid.

17.3 Any bid not accompanied by an acceptable bid security and not secured as indicated in Sub Clause 17.1.

17.4 The Bid Security of the unsuccessful bidders, except for L1, L2 and L3 bidders, will be returned as early as possible as but not later than 28 days after the expiration of the period of bid validity.

17.5 The Bid Security of the successful bidder, along with second and third lowest tenders, will be returned when the bidder has furnished the required performance security and signed the agreement.

17.6 The Bid Security may be forfeited

- a) if the bidder withdraws his bid during the period of bid validity;  
b) if the bidder does not accept the correction of his bid price, pursuant to Clause 29;  
c) in the case of a successful bidder, if the bidder fails within the specified time limit to  
i) furnish the required Performance Security or  
ii) sign the Agreement.

### **a. EARNEST MONEY DEPOSIT.**

Each tender must be accompanied by, a receipt of deposit as tender guarantee in the form of Earnest money mentioned on relevant page. Any tender not accompanied by a tender guarantee in the form of earnest money deposited for the sum stipulated in the tender's document will be summarily rejected. The earnest money deposit shall be paid with the tender by D.D. Payable at Municipal Commissioner Ahmedabad without which the tender shall not be considered as valid.

Sr.No.	Tender No.	Estimated Cost	Amount of E. M. D.

The Earnest Money Deposit will be returned to the unsuccessful tenderers after an award has been finalized.

The Earnest Money Deposit (Tender Guarantee) will be forfeited in the event, the successful tenderer fails to accept the contract and fails to submit the "Performance Guarantee Bonds to the Owner as stipulated in this tender documents within fifteen days (15 days) after receipt of notice of award of contract .

No interest shall be paid by the owner on any tender guarantee.

#### **18. INCOME TAX CLEARANCE CERTIFICATE**

Latest Income Tax clearance Certificates must accompany with the tender without which the tender is liable to be summarily rejected. The income tax clearance certificate obtained from the income tax officer shall clearly indicate the income tax circle/ward district and the reference number of the assessment along with the assessment year.

#### **19. PREPARATION OF TENDER DOCUMENTS**

Tenderers are required to note the following while preparing the tender documents.

Tender shall be submitted on the Tender form bound here in English. All appendices and statements shall be properly filled in. Numbers shall be stated both in words and in figure where so indicated and the signature of all persons signing shall be in longhand.

Tender shall be accompanied by the prescribed tender security bond and other required documents and drawing. All witnesses and sureties shall be persons of status and probity and their full names, occupation and address shall be stated below their signature.

Variation to the contract Documents requested by the tenderer may be affixed and duly signed and stamped. Such variation may be refused by the authority is not obliged to give reason for his decisions.

Submission of tenders shall comply with the notice inviting tenders as to place, date and time. Tenders and tender security (E.M.D.) shall be enclosed with the tender documents and shall be put in a sealed envelope.

#### **20. Format and Signing of Bid**

- 20.1 The bidder shall prepare two copies of the documents comprising the bid as described in Instructions to Bidders.
- 20.2 The bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the bidder.
- 20.3 The bid shall contain no alterations, omissions or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the bidder, in which case the person or persons signing the bid shall initial all such corrections.
- 20.4 All witnesses and sureties shall be persons of status and probity and their full names, occupations and addresses shall be printed below their signatures.

#### **D. Submission of Bids**

Tenderers are requested to submit the Tender Documents on following lines. Following documents to be submitted online as well as in physical.

Volume containing following documents.

- i. Tender fee and Tender security bond (Earnest Money )
- ii. Certificate as registered contractor with Government of Gujarat or appropriate authority
- iii. Tender's financial capability and standing over at least past five years.
- iv. Current Income Tax Clearance Certificate.
- v. Tenderer's experience in the field relevant to this contract.
- vi. Tenderer's present commitments.

- vii. The technical ability and qualifications of the tenderer. Details of technical personnel with their qualification & experience.
- viii. A list of the equipment the tenderer possessed and that which he proposed to acquire and use for the purpose related to the work
- ix. Tenderer should submit all the drawings (Empanelment architectural / Structural) which they have received, along with the tender.
- x. Bank Solvency Certificate.
- xi. Details to be submitted as per the Statement No 1 to 9
- xii. Evidence of adequacy of working capital for this contract.
- xiii. Details to be submitted as per statement no. 10 in front of the tender documents.
- xiv. GENERAL INFORMATION

Tender document submitted by the post, same should be submitted by registered post or by RPAD or speed post or courier or hand delivery only. The time limit for receipt of tender shall strictly apply in all cases. The tenderers shall have therefore ensure that their tender is received by the competent authority (AMC) at the required place before expire of the time limit. No delay on account of any cause of receipt of tender shall be entertained. Tenders received after the time limit is over will not be accepted and inadvertently accepted will not be opened and will be returned unopened. A tender which may get opened before the due date with no indication having been given on the envelopes containing a tender therein is liable to be rejected.

Mailed tender must be sent in a covering envelope by registered post, Acknowledge Due. The return receipt will be endorsed to show the date and time of receipt. Mailed Tenders not received at the required place before the date and time set for the receipt will not be accepted from post.

The tender must contain name address of residence and place of business of the person or person submitting the tender and must be signed and sealed by the tenderer with his usual signature.

Tenders by partnership firm must be furnished with the full names and address of all partners and be signed by one of the members the partnership or by a legally authorised representative holding power of attorney followed by signature and designation of the person of person signing.

Tenders by corporations/company must be signed with the legal name of the corporation companies by the president or by the secretary or other person or person legally authorised to bind the corporation/company in the matter.

- **GENERAL PERFORMANCE DATA**

Tenderers shall present all information which sought for in the tender document in form of various schedules. Tenders may not be considered if every Blank and the Schedule are not properly filled in before submission of the tender.

## **21. Sealing and Marking of Bids**

- 21.1 The bidder shall submit the Bid in two parts, the Technical Bid and the Financial Bid. Each part of the Bid shall be sealed in separate envelopes and the two sealed envelopes shall be sealed in an outer envelope. The Bid envelopes shall be marked as follows:-

**Outer Envelope: “Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”**

**Inner Envelope, Technical Bid:**

**Technical Bid for “Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”**

The inner envelope marked ‘Technical Bid’ shall contain the following:

Both these envelopes shall be kept in one envelope and marked “Technical Bid” and sealed.

**Inner Envelope, ‘Technical Bid’:** The sealed envelope marked “Technical Bid” shall contain the following:

**Envelope-1 for**

Tender fee  
Bid Security  
Personal Details  
Registration certificate of class  
Qualification detail  
Hard copy of tender

**Inner Envelope, Financial Bid:** The sealed envelope marked ‘Financial Bid’ shall contain the following:

**Envelope-2 (Price Bid) for**

Unfilled Bill of Quantity ( B.O.Q)

The inner envelopes marked as ‘Technical Bid’ and Financial Bid’ shall be enclosed in an outer envelope and sealed.

21.2 The inner and outer envelopes shall

a) Be addressed to the Employer at the following address:

Assistant Manager, Project, 2nd Floor block-C,  
Ahmedabad Municipal Corporation, Sardar Patel Bhavan, Danapith,  
Ahmedabad-380001.

b) Bear the following identification:

**“Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”**

c) Indicate the name and address of the bidder.

21.3 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

**22. Deadline for Submission of Bids**

- 22.1 Bids must be received by the Employer at the address specified above not later than the time and date specified in the IFB.
- 22.2 The Employer may, at his discretion, extend the deadline for submission of bids by issuing an amendment in accordance with Clause, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

**23. Late Bids**

- 23.1 Any bid received by the Employer after the deadline for submission of bids prescribed in Clause 22 will be returned unopened to the bidder.

**24. Modification and Withdrawal of Bids**

- 24.1 The bidder may modify or withdraw his bid after bid submission, provided that written notice of the modification or the Employer prior to the deadline for submission of bids receives withdrawal. Any MODIFICATIONS in respect of tender document shall be submitted in separate sealed envelope duly marked so.
- 24.2 The bidder's modification or withdrawal notice shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause 21, with the outer and inner envelopes additionally marked "MODIFICATIONS" or "WITHDRAWAL" as appropriate.
- 24.3 No bid shall be modified by the bidder after the deadline for submission of bids.
- 24.4 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in Clause 16 may result in the forfeiture of the Bid Security pursuant to Clause 17.
- 24.5 If during Tender validity period, the tenderer withdraws his tender, the tender security (Earnest Money Deposit) shall be forfeited.

**24.6 INTERPRETATIONS OF TENDER DOCUMENTS**

Tenderer shall carefully examine the Tender Document and fully inform themselves as to all the conditions and matters which may in any way affect the work or the cost thereof. Should a tenderer find errors, omissions or discrepancies from the specifications or other documents or should be in doubt as to their meaning, he should at once address query to the Addl.City Engineer (Traffic Project) AMC during the Pre-Bid Meeting. The correct interpretation of the same will be issued to all tenderers as addendum.

**24.7 MODIFICATION OF DOCUMENTS**

Modification of specifications and extension of the closing date of the tender, if required will be made by an addendum. Copies of each addendum will be sent to all tenderers. These shall be signed and shall form a part of tender. The tenderer shall not add to or amend the text of any of the documents except in so far as may be necessary to comply with any addendum.

## **ADDENDUM**

*Addendum or corrigendum conveying any change or correction in respect of the work shall essentially form the part of the contract documents. The full consideration shall be given to such addendum or corrigendum before submission of tender duly filled in by the contractor. Therefore, the contractors shall have to check such addendum or corrigendum published by AMC atleast 24 hours prior to final submission date and time of the tender through its website [www.nprocure](http://www.nprocure) Tenderers shall verify the number of addendum issued and enclose the same with the tender documents, failing which the tenders shall be liable for rejection and no any complaint in respect to this shall be entertained under any circumstances.*

### **24.8 ERRORS AND DISCREPANCIES IN TENDERS**

IN CASE OF CONFLICT BETWEEN THE FIGURES AND WORDS IN THE RATES THE RATE EXPRESSED IN WORDS SHALL BE CONSIDERED.

## **E. Bid Opening and Evaluation**

### **25 Opening of Technical Bids**

- 25.1 The Employer will open the outer envelope of all the bids received for the package (except those received late) containing the sealed Tender volume and announce the names of (i) bidders, (ii) bidders who have submitted modification of Tender bids, and (iii) bidders who have given notice for withdrawal of their bids in the presence of bidders or their representatives who choose to attend on the date and time mentioned in the IFB. In the event of specified date of bid opening being declared as a holiday for the Employer, the Tender will be opened at the appointed time and location on the next working day.
- 25.2 Bids for which acceptable notice of withdrawal has been submitted pursuant to Clause 24 shall not be opened and shall be returned.
- 25.3 Envelopes marked Envelope-1, Bidders detailed and Tender fee, E.M.D. shall be opened first. The Employer at the opening will announce bidder's names, 'Modification of Tender', the presence/or absence of Bid Security, the amount and validity of Bid Security furnished with each bid, is valid registration and such other details, as the Employer may consider appropriate.
- 25.4 The bidders or their representatives who are present shall sign attendance sheet evidencing their attendance.
- 25.5 The envelope-2, price bid shall be opened for those bidders who fulfill the above asked details in envelope-1
- 25.6 The Employer shall prepare besides the record of bid opening, minutes of the Bid opening, including the information disclosed to those present in accordance with Sub Clause 25.3 hereof.

### **26. Examination of Technical Bids and Determination of Responsiveness of Technical Bid**

- 26.1 Prior to evaluation of Technical Bids, the Employer will determine whether the bid is accompanied by the required Bid Security.

- 26.2 If the Bid Security furnished does not conform to the amount and validity period as specified in the Invitation for Bid and has not been furnished in the form, the bid shall be rejected by the Employer as non-responsive and the Technical Bid and the sealed Financial Bid will be returned to the bidder.
- 26.3 Subject to confirmation of the Bid Security by the issuing bank, the Technical Bid accompanied with valid Bid Security will be taken up for further evaluation. In case, the Bank does not confirm the Bid Security, the bid shall be rejected as non-responsive and no further evaluation carried out.
- 26.4 The Technical Bid will further be examined to determine whether the bid has been properly signed, meets the eligibility and qualification criteria, has the required available bid capacity, is accompanied by the requisite certificates, undertaking and other relevant information specified in the bid documents and is substantially responsive to the requirement of the bidding documents and provides any clarification for ascertaining the correctness of the information/details that the Employer may require pursuant to Clause 30.
- 26.5 If the Technical Bid is not substantially responsive, it will be rejected by the Employer and will not subsequently be made responsive by correction or modification or withdrawal of the non-conforming deviation or reservation.
- 26.6 The Employer shall inform, by fax, the bidders, whose Technical Bid is found to be responsive, the date, time and place of opening of Financial Bid. In the event of the specified date being declared a holiday for the Employer, the Financial Bid will be opened at the appointed time and location on the next working day.
- 26.7 The Financial Bid of those bidders whose Technical Bid is determined to be non-responsive or not substantially responsive pursuant to this Clause 26 will be returned unopened to the bidders

## **27. Opening of Bids**

- 27.1 The Financial bids shall be opened online for evaluation and award.
- 27.2 Financial Bids of the bidders whose bid capacity has already been exhausted on award of tender(s) prior to the package under consideration shall not be opened and returned unopened to the bidder.
- 27.3 The Employer will open the 'Financial Bid' online of those bidders whose Technical Bid has been determined to be substantially responsive in accordance with Clause 26, and who have the required available bid capacity.
- 27.4 Financial Bids of the bidders whose bid capacity has already been exhausted on account of award of tender(s) prior to this proposal will not be opened for further evaluation and will be returned to the bidders.
- 27.5 The bidders or their representatives who are present shall sign attendance sheet evidencing their attendance at the time of Pre-Bid Meeting and submit their queries if any in written. Any queries raised after the Pre-Bid Meeting shall not be entertained.

## **28. Examination of Bids and Determination of Responsiveness of Bid**

- 28.1 The Employer will determine responsiveness of each Tender volume with respect to filled percentage above or below of total amount of Priced Bill of Quantities, Technical Specifications, Drawings and other relevant requirement of bidding documents.
- 28.2 A substantially responsive Tender volume is one which conforms to all the terms, conditions and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one (i) which affects in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial

way, inconsistent with the bidding documents, the Employer's rights or the bidder's obligations under the Contract; or (iii) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive Tender volume.

- 28.3 If the Tender volume is not substantially responsive, it will be rejected by the Employer and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

**29. Correction of Errors**

- 29.1 Tender volume determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Arithmetic errors will be rectified on the following basis:-

- i) where there is a discrepancy between the figures and words, for % and amount, the figure in words will govern and
- ii) where there is discrepancy in total amount arrived by addition of percentage (above or below), the amount arrived by addition percentage (above or below) as written in word shall govern.

- 29.2 The amount stated in the Form of Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, his bid will be rejected, and his Bid Security may be forfeited in accordance with Clause 17.

**30. Evaluation and Comparison of Tender volume**

- 30.1 The Employer will evaluate and compare only those Tender volumes which are determined to be substantially responsive in accordance with Clause 28 and qualified for award of Contract in accordance with Clause 5.

- 30.2 In evaluating the Tender volume, the Employer will determine for each Tender volume the evaluated Bid Price by adjusting the Bid Price as follows:-

- a) making any correction for errors pursuant to Clause 29;
- b) making appropriate adjustments to reflect any price modifications offered in accordance with Clause 24.

- 30.3 The estimated effect of the price adjustment provision under method of price adjustment mentioned in Appendix to Bid Form of Section V applied during the period of implementation of the Contract, shall not be taken into account in Bid evaluation

- 30.4 If the Bid of the successful Bidder is seriously unbalanced in relation to the Employer's estimate of the cost of the items of the Works to be performed under the Contract, the Employer may require the bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, the Employer may require that the amount of the performance security set forth in Clause 37 be increased up to an additional 5 (five) per cent at the expense of the successful bidder to protect the Employer against financial loss in the event of default of the successful bidder under the Contract.

- 30.5 A bid, which is unrealistically lower than estimate and which the bidder, could not substantiate satisfactorily, may be rejected as non-responsive.

- 30.6 In comparing tenders, the AMC shall consider factors such as the time of completion, efficiency and reliability of construction method proposed, compliance with the specification, relative quality, the operation, maintenance and replacement cost of structure and plant and also the qualifying criteria for the evaluation of tenders. The price bids of only those tenderers who are pre / post qualified will be opened online.



**31 Clarification of Bids**

- 31.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at his discretion, ask any bidder for authentication the correctness of the information/details furnished by him in his bid. Such request by the Employer and the response by bidder shall be in writing or by cable/fax, but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetical errors discovered by the Employer in the evaluation of the bids in accordance with Clause 29.
- 31.2 Subject to Sub Clause 31.1, no bidders shall contact the Employer on any matter relating to his bid from the time of bid opening to the time contract is awarded.
- 31.3 Any effort by the bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of his bid.

**32. Process to be Confidential**

- 32.1 Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced. Any effort by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of his bid.

**F. Award of Contract**

**33. Award**

- 33.1.1 Subject to Clause 34, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest Evaluated Bid Price pursuant to Clause 30, provided that such bidder has been determined to be (i) eligible in accordance with the provisions of Clause 3; and (ii) qualified in accordance with the provisions of Clause 5.

**34. Employer's Right to accept any Bid and Reject any or all Bids**

- 34.1 Notwithstanding Clause 33, the Employer reserves the right to accept or reject any bid and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Employer's action.

**35. Notification of Award**

- 35.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder by cable/fax and confirmed by registered letter that his bid has been accepted. This letter (hereinafter and in the Conditions of Contract called "the Letter of Acceptance") shall name the sum which the Employer will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract termed "the Contract Price").
- 35.2 The notification of award will constitute the formation of the Contract.

**36. Signing of Agreement**

- 36.1 At the same time that the Employer notifies the successful bidder that his bid has been accepted, the Employer will direct him to submit the Performance Security and attend the Employer's office on a date determined by the Employer for signing the Form of Agreement.

### 36.2 SIGNING OF CONTRACT

The successful tenderer shall be required to execute the contract agreement within 15 days of receipt of intimation to execute the contract, failing which the AMC will be entitled to nullify the award and forfeit the earnest money deposit. The person to sign the contract document shall be as per AMC's policy.

### 36.3 DISQUALIFICATION

The tender shall be disqualified and will not be taken for consideration if

- a. The envelope does not show on the outside the reference of bid and thus gets opened before the due date of opening.
- b. The tender Security Deposit is not deposited in full and in the manner as specified i.e. Earnest Money Deposit.
- c. The tender is in a language other than English or does not contain its English Translation in case of other language adopted for tender preparation.
- d. The tender documents received are not duly signed by authorized person.
- e. The general performance data for qualification is not submitted fully.
- f. Tenderer does not agree to payment terms.

The tender may further be disqualified if,

- a. The Price variation is proposed by the tenderer on any principal other than those provided in the tender documents.
- b. The Completion schedule offered is not consistent with the completion schedule defined and specified in tender document.
- c. The validity of tender is less than what is stated in the tender.
- d. Any of the page or pages of tender is/are removed or replaced.
- e. All corrections or posted slips are not initialed by tenderer.
- f. Any erasure is made in the tender.
- g. If it is joint venture.

## 37. Performance Security

- 37.1 As Security Deposit 5% deduct from Each running & Final Bill which hold as performances Security Deposits. Which release after Completion of Successful Defect liability Period.

## 38. Corrupt or Fraudulent Practices

- 38.1 The Employer will reject a proposal for award if he determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question. The Employer will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract by AHMEDABAD MUNICIPAL CORPORATION if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contract, or during execution.
- i) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
  - ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among bidders (prior to or after bid submission)

designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

### **39      SIGNING OF TENDER DOCUMENTS**

If the tender is made by an individual, it shall be signed with his full name above his current address. If the tender is made by proprietary firm, it shall be signed by the proprietor above his name and name of his firm with his current address.

If the tender is made by a firm in partnership, it shall be signed by all the partners of the firm above their full names and current address, or by a partner holding the power of attorney for the firm, in which case a certified copy of the power of attorney shall accompany the tender. A certified copy of the partnership deed, current address of all partners of the firm shall also accompany the tender.

If the tender is made by limited company or a limited corporation, it shall be submitted duly signed by an authorised person holding the power of attorney, & shall accompany the tender. Such limited company or corporation may be required **to furnish** satisfactory evidence of its existence before the contract is awarded.

If the tender is made by a group of firms, the sponsoring firm shall submit complete information pertaining to each firm in the group and state along with the bid as to which of the firms shall have the responsibility for tendering and for completion of the contract documents and furnish evidence and responsibilities for completion of contract documents. The full information and satisfactory evidence pertaining to the participation of each member of the group of firm in the tender shall be furnished along with the tender.

All witness and sureties shall be persons of status and probity and their full names, occupations and address shall be stated below their signature. All signatures in the tender document shall be dated.

### **40      TIME REQUIRED FOR COMPLETION**

The completion period / time limit mentioned in this schedule is to be reckoned from the date of issue of work order to the date by which physical completion of the work take place. The completion period / time shall be in accordance with the calendar months.

### **41      POLICY FOR TENDER UNDER CONSIDERATION**

Tender shall be termed to be under consideration from the opening of the tender until such time any official announcement or award is made. While tenders are under consideration, tenderers and their representative or other interested parties are advised to refrain from contracting by any corporation personnel or representative on matters related to the tenders under study. The AMC representative if necessary will obtain clarification on tenders by requesting such information from any or all the tenderers, either in writing or through personal contacts may be necessary. The tender will not be permitted to change the substance of his tender after tenders have been opened. This includes any post tender price revision. Non compliance with his provision shall make the tender liable for rejection.

### **42      PRICES AND PAYMENTS**

The tenderer must understand clearly that the prices quoted are for the total works or the part of the total works quoted for inclusive of all costs of materials, labour, equipment, supervision, other services, royalties. Octroi, etc. and also inclusive of the Govt. taxes. No claim for additional payment beyond the prices quoted for will be entertained. The tenderer will not be entitled subsequently to make any claim on any ground.

**43 PAYMENT TERM**

The terms of payment are defined in the general terms and condition of contract. The AMC shall not under any circumstances relax these terms of payment and will not consider any alternative payment terms. Tenderers should therefore in their own interest note this provision to avoid rejection of their tenders.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)

Ahmedabad Municipal Corporation

# **AHMEDABAD MUNICIPAL CORPORATION**

## **Section II - CONDITIONS OF PARTICULAR APPLICATION**

### **Section II :A:GENERAL**

1. The selection process will lay high emphasis on the ability and competency of contractors to do high quality work within the given time schedule.
2. The onus of providing, all necessary company / project related information, in appropriate manner and medium, so as to demonstrate the competency of the bidder and to allow proper evaluation, will rest entirely on the Bidder.
3. All information has to be typed or hand written legibly. All pages of the Bid have to be sealed and initialed by the bidder
4. ALL INFORMATION HAS TO BE SUBMITTED IN THE PRESCRIBED FORMAT ONLY. Projects for which incomplete information has been provided will not be considered for evaluation. The Bidder may attach separate sheets if so required. However, the final bound document submitted, has to be submitted in vertical A4 size (210 mm X 297 mm) except Vol. V.
5. The scope of work, project description mentioned in the document is indicative and is likely to change during detail design.
6. Conditional tenders will not be accepted.
7. AMC's decision for selection or rejection of the offers shall be final and binding to all.
8. Bidder must provide information as mentioned in the prescribed forms for projects. Information other than that related to projects shall not be considered for evaluation.
9. If Ahmedabad Municipal Corporation is convinced that the Bidder has resorted to material misrepresentation or provided fraudulent information / statement, the said Bidder will be liable for disqualification / rejection at any stage.
10. Proof for fulfillment of eligibility criteria should be submitted along with Tender volume. If the Tender volume is submitted without valid documents and without proof of eligibility criteria it will be rejected.
11. Those who do not meet with the eligibility criteria need not submit the Tender document.
12. Tenders, which do not fulfill all or any of condition or are submitted incomplete in any respect or are conditional tenders, will be rejected.
13. Municipal Commissioner reserves the rights to reduce/ increase the scope of work and contract without assigning any reason thereof.
14. Contractor shall have to make his own arrangements for water and electricity for the purpose of construction work at site at his own expense.
15. If the contractor fails to execute the said works within prescribed time limit, the said work shall be carried out at the risk and cost by other contractors plus 27 % supervision charges or as may be decided by the City Engineer from time to time. The failure of execution in desired time shall also include over and above the penalty as specified above i.e 1000/day delay for thermoplastic paint/cat eye delay in execution.

#### **16. Safety and Signage**

Contractor has to arrange for the complete safety of the persons working for project, users of the road i.e. public and vehicles also. All the arrangements of traffic drums, metal / fiber cones, traffic blinkers, traffic signs as per design, safety tapes etc. to be arranged at site. Necessary florescent marking on traffic signs to be provided so that it should be visible at night. During night working hours safety in charge personnel shall be provided with florescent jackets. The Contractor has to make all the necessary arrangements for making all the temporary diversions for proper working at site including traffic signages, safety cones, traffic blinkers, barricading tapes, red and green flags etc for making easy smooth and safe conditions for the traffic. The Contractor shall and must provide above at his own cost.

#### **17. Tax, Duties on Materials**

All charge on account of Octroi, labour cess, excise duties, terminal tax, sales tax and Govt. duties / tax etc. on material procured for the works from any source shall be borne by the contractors. No (P ) or "C" or "D" form shall be supplied by AMC for this purpose. The successful tendered shall have to enter into an agreement on a non-judicial stamp paper as per the form of the agreement approved by the AMC. The cost of stamp paper and adhesive stamp shall be borne by the contractor. **The Rates quoted Excluding applicable G.S.T. as per rules.**

**18. Submission of project schedule:**

Contractor has to submit the following documents along with the qualification data of the tender failing in which shall lead to rejection of the tender.

**19. Water Supply:**

The contractor shall arrange at his own cost, a suitable supply of piped water for the construction of the works and provide a satisfactory supply of potable water for drinking, washing, sanitation and cleaning down. The contractor will be responsible for all the costs where applicable of connection, meter installation, water consumed, water required for testing purposes, disconnection and the laying, maintenance and ultimate removal of any distribution system around the site. If contractors wishes to get the water supply from Ahmedabad Municipal Corporation, if available then water connection at one point will be given. The contractor will arrange Balance distribution. Recovery at the actual charges as per prevailing norms of the AMC will be deducted for the actual consumption from each RA bill. In case of non-availability of water supply by AMC, then it is the responsibility of the contractor to arrange for the water supply at his own.

**20. Electricity:**

The Corporation will do co-ordination for the supply of the electricity. But the Contractor must make his own arrangements with the Corporation and Electricity Supply Authorities and with other contractors to connect to and take a supply from such services. Paying all costs in this regard will be the responsibility of the contractors. The Contractor shall be entitled to use such supply. Electricity as may be available on the site for purpose of the work and shall pay such charges as is fixed by the appropriate supply Authorities. In case if there is any delay in supply of power at site or any interruption or fault in the power during the work. No compensation shall be paid for idle labor staff, machineries and for use of diesel operating sets etc. as the case may be and no extra time limit shall be granted. In case of failure of the non-payment of power consumption charges, AMC reserves the right to deduct the same from the RA/ Final Bills of the contractor.

**21 Liaison with local authority for electrical connections for the AMC**

The contractor is responsible for liaison with local authority for change in supply connection or new connection on behalf of AMC. It includes filling the necessary application to power Supply Company, follow up and getting the supply, filling the necessary test reports to the power supply company. All official fees including security deposits and other expenses shall be of initially paid by the contractor.

**~~22. Providing Computer System with Internet Connection and color printer for Client/ DELETED~~**

For Tenders more than 75 lakhs: The contractor shall supply a Computer System with all the latest features along with Autocad, bhasha bharti software and Shruti arpita fonts as per the fonts used in AMC as well as Govt. of Gujarat from time to time. The contractor shall also provide a new latest color printer alongwith internet facility at store for client. The contractor shall not be paid for the same. The failure to provide the same prior to submission of the first running bill date shall attract an additional penalty of Rs. 35000.

**23. CHANGE IN QUANTITY OR QUALIFYING CRETERIA:**

Municipal Commissioner reserves the right to waive any qualifying criteria or information in any tender as a special case and to reject any or all tenders without assigning any reason thereof. He also reserves the right to vary the quantities of items or group of items and the quantum of work as specified in the schedule of prices as may be necessary in the interest of public at large for which no any claim shall be entertained.

25. Municipal Commissioner reserves right to increase / decrease the scope of work & also split the tender in two or more contracts without assigning any reason even after the work is awarded.

26. In the event of any discrepancy the following order or precedence should apply

- (a) Dimension & quantity
  - (1) Tender form
  - (2) Drawing
  - (3) Specification

on drawing; figures dimension unless previously incorrect will be followed in preference to select dimension.

- (b) Description  
(1) Tender form  
(2) Drawing  
(3) Specification

In case of defective description as ambiguities, the Engineer in-charge shall issue further instruction or clarification or direction as to which manner the work is to be carried out. The contractor shall comply with such instructions strictly.

Irrelevant mistakes, discrepancies or errors made through over sight by AMC leading to misunderstandings shall be got corrected properly by the contractor from Additional City Engineer.

The contractor shall take no advantage of any apparent error or omission in drawing as description or specification. The Engineer-in-charge shall make such correction as may be necessary to fulfill intent of specification plan.

27. Tender once accepted shall be binding on the contractor even if the formal agreement is not signed / executed.

28. The contractor shall have to give in writing the date of completion of work within a fortnight from date of work completed by him otherwise the date noted on record by department shall be reckoned as final & no excuse as representation in that behalf shall be granted at later date.

29. Specimen signature of contractor will be cross checked whenever the contractor receives the payment from the account section of AMC **or** in case of representative of the contractor receiving the payment, he shall have to produce the letter of authority from the contractor who has signed the contract agreement.

**Manpower / Labours :**

- The work force provided by the contractor shall have to be properly dressed in uniform and shoes, safety gears for work requirement all the time. Each person provided by the contractor shall have to display the Identity Card on the uniform, with photo.
- Contractor has to arrange for all Mechanics, labour, etc. & incur their salaries, wages, charger etc. as per the prevailing rules and regulations & all liabilities and responsibilities also lies with him.
- The Contractor will be solely responsible for any consequences under laws, arising out of any accident caused by his equipments &/or his employees to the property or personnel of the corporation &/or third party under this contract.
- The corporation shall not be responsible for any claim / compensation that may arise due to damages / injury / death pilferage to the Contractor's vehicles, equipments, property, staff and any third party or the property, under any circumstances while providing services under the Contract.

**24. Tenderers to please note this carefully:**

1. If the tender is taken in favour of a company, the power of attorney in favour of the person who may have signed the tender for the company must accompany the tender
2. Solvency Certificate of a bank an amount up to 20% of the tendered cost.
3. Tenderer shall pay EMD (Earnest Money Deposit) amounting to 1% of the estimated cost of work in the form of BG (Bank Guarantee) from the nationalized / scheduled banks only valid for 180 days as per enclosed format.
4. The contractor shall have to furnish with his pre / post qualification details, the income tax assessment number and ward under which he is assessed.
5. Copies of certificate as regards previous experience, must accompany the tender.
6. Declaration showing all works on hand with the tenderers and the value of works that remains to be executed in each case must accompany tender.

7. Pages of tender documents shall be initialled by the tenderer with company's seal.
  8. All corrections, overwriting and their erasures shall be initialled by the tenderer.
  9. Any error in quantity or amount in abstract form (bill of quantity) showing items of works to be carried out shall be adjusted in accordance with rules :
  10. In the event of discrepancy between description in words and figures quoted by a tenderer in the "rates" column, the description in words shall prevail.
  11. The tender will be considered as invalid, if the requirements as per instructions of tender no.1 to 10 above is not complied with before submitting the tender or else if it is observed that the information as furnished in tender are not correct.
  12. Contractors are requested to furnish all the required technical details carefully supported by authentic documents for being post qualified. The price bids of those contractors will be opened who will be post qualified.
  13. Municipal Commissioner reserves rights to reject any or all the tenders without assigning any reason thereof.
  14. In addition to above, the tenders will be rejected out right if:
  15. The tenderer proposes any alteration in the time allowed for completion of the work or any correction made in any code or BOQ / Price Bid or specifications.
  16. The tenders submitted with any conditions.
  17. Any of the page/ pages of the tender is/are removed or replaced.
  18. All corrections, additions or pasted slips are not initialled by the tenderer.
  19. Any erasure is made by him in the tender.
  20. The tenderer or in the case of a firm, each partner or the person holding the power of attorney thereof, does not sign or the signature's is/are not attested by a witness on the tender in the space provided for the purposes.
31. A certificate of registration as approved contractor shall be attached with the tender.
32. Several documents forming the contract are the essential parts of the contract and a requirement occurring in any one is binding as though occurring in all. These requirements are intended to be mutually explanatory and complementary and to describe and provide for a complete work
- The event of any discrepancy, in several documents forming the contractor in any one document, the following order of precedence should apply:
- Dimensions and quantities :
- i) Drawings approved for construction.
  - ii) BOQ / Financial Bid of the tender form
  - iii) Specification.
- On drawings, figured dimensions, unless obviously incorrect, will be followed in preference to scaled dimensions.
- Description:
- i) Drawings
  - ii) BOQ / Financial Bid of the tender form.
  - iii) Specifications.
- In case of defective description or ambiguity, the Engineer in charge shall issue further instructions directing as to which manner the work is to be carried out. It may have to be understood that the best modern practice has to be followed. The contractor shall forthwith comply with such instructions strictly.
- The Contractor shall take no advantage of any apparent error or mistake through oversight or omission in drawings or specifications and the Engineer in charge shall make such corrections and interpretation as may be found necessary to fulfill the intent of the plans and specifications.



## 25. Photographs :

Contractor shall submit the colour photographs and Pendrive for soft copy of every work done by him at site under this contract along with each R.A Bill or whenever asked by Engineer In Charge at no extra cost.

## 25. Insurance

- **The contractor shall be required to take comprehensive insurance for all the Plant, Machineries and equipment during the contract period.** It will be the responsibility of the successful tenderer to have insurance coverage of their operating staff also. They are requested to note that there will not be any reimbursement in this regard by AMC. As regards any mishap / accident happened on the road or at site, the successful tenderer will have to shoulder the complete responsibility of the same, right from registration of Police complaint, lodging / follow up of the insurance claim and facing the court trials etc. It shall be the responsibility of successful tenderer to set right the machine without raising any extra bills / claim against the same to AMC. However, they shall be liable to receive all the payments received by AMC (if issued to AMC by insurance company) against the settlement of insurance claims from the Insurance Institutions as per rules /they can get reimbursement directly from the insurance company. AMC authorities shall give the full cooperation to the successful tenderer by signing the requisite documents necessary for raising the insurance claim up to settlement of the same.
- 1 The Contractor shall provide in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the any events which are due to the Contractors risks. Contractor Should purchase & Submit **Contractor All Risk Insurance Policy**.
- 2 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurances shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 3 If the Contractor does not provide any of the policies and certificates required, the Employer may affect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 4 Alterations to the terms of insurance shall not be made without the approval of the Engineer.
- 5 Both parties shall comply with all conditions of the insurance policies.

Provided always that nothing herein contained shall be deemed to render the Contractor liable for or in respect of or to indemnify the Municipal Corporation against any compensation or damage causes by the Excepted Risks.

**(A) Comprehensive Operation:**

- i) As the operation of the machine on everyday basis is required, it would be the responsibility of the successful bidder to provide 1 skilled operator having known to all operational activities of the machine. There would not be any services to be rendered on national holidays i.e. 26th January, 15th August & 2nd October.
- ii) **During urgent situations of work requires**, such as visits of VIPs successful bidder will be require to render operational service even on National holidays. No extra payment (Other than one which is approved) would be payable to the contractor form rendering operational services on these events which is required to be noted by the successful bidder. Contractor shall keep themselves and maintain the required materials, stocks diesel, fuel and necessary fuel gas bottles, etc daily bases and during the work period, shall not be liable to refuse to work under such or any other circumstances.
- iv) To maintain the disciplined and efficient services, it would be necessary to appoint at least one supervisor for this tender work better coordination in addition to operators and provide them uniforms, safety gears & mobile facilities. A successful bidder shall maintain log sheet / Computer Record to enter the information about the day to day works allotted to them by the representative of their officer incharge of work.
- xii) For any default of service performance a penalty of amount equivalent or not more than to the approved cost of the work (at the rate approved by AMC) shall be deducted /charged from the running bills. The details of the events of default and the exact rate of penalties shall be as specified in tender terms.
- xiii) As a disciplinary measure, following penalties would be applicable so that the defaults are not recurred as per the penalty shown in the penalty table.

Sr	Type of default	Penalty to be impost
1	If work is not done properly on road.	Entire payment of the work executed for the same shall be deducted for such event.
2	Non use of mobileby any ofSupervisor/Manager &/Or Operator.	Rs. 50/- for each of such event.
3	If any of the contractor's staff at the Machine is found to be working without the prescribed safety gear, uniform etc.	Rs. 25/- per person for that shift/event.
4	If the minor and major repairing work is not carried out as per the schedule given in tender	Minimum Rs. 500/- and above 10 sqmt shall added Rs.100/- per day per 10 Sqmt.

Supply of labour team incl. of supervisor and Operator for Automatic and semi automatic applicator machine and also operator for boiler, skilled labour for road marking and unskilled labour for barrication, traffic diversion for safety purpose.

Contractor shall be responsible for applying thermoplastic paint as per specification and IRC guide line. Contractor shall provide and work with required shape and sizes of stencils for Directional Arrow, Lettering (1 word - up to 4 letters), or any kind of Artwork, etc. Contractor shall provide and apply primer before hot applied thermoplastic paints marking on RCC road surface, which must ensure better adhesion of thermoplastic paint to the surface and also increase paint durability, including all material, manpower, tools and machinery required for work, with all required safety standards to work in running traffic conditions.

Contractor shall keep all work checking necessary tools like venial gauge machine for thickness of applied thermoplastic paint and digital thermometer for checking of temperature of hot applied paint. Also including of diesel, fuel and necessary gas bottles etc. Also take insurance of labour and necessary machine tools. Operator and drivers must be having license and necessary document as per RTO rules.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)

Ahmedabad Municipal Corporation

## **Section II:- B Technical conditions**

1. AMC shall at its discretion, may employ services of **PMC/Third party inspection** agency for quality control. The contractor shall fulfill all the requirement related to quality control as instructed by TPI /AMC at no extra cost.
2. The contractor shall be born all testing charges which are carried out during work as per IS. Or Testing Fees shall be deducted on Actual basis in each R.A. Bill
3. The contractor shall deposit unused scrap of Board/Bollard etc. on near traffic store.
4. Contractor shall be responsible to obey all Labour Laws, Environmental and Safety Laws. (The existing laws as well as framed from time to time). Any penalties laid due to violation of such laws shall be directly deducted from the contractor's outstanding.
5. **DEFECTS:** Date of completion for start of defect liability period for a particular work shall be considered as mentioned in the clause no. 7 of Information to Tenderers . The contractor shall be required to make good all the damages / defects identified and conveyed to him, during the entire defect liability period. The method and time limit of rectification will be decided by the Engineer in charge. If he fails to carry out rectification as per the instructions, the same will be carried out at his cost and it shall be recovered from the amount retained. The same shall be charged an additional amount of 27% as Supervision Charges over and above the penalties as stated in different clauses above for Rs.100/board/day delay and Rs.1000/day delay. The repair work shall also include repairing of Thermoplastic paints, Signages, footpath, North verge etc. which are damaged due to defect in the road on reimbursement basis if notified by Engineer- In Charge.

**Clause 22:-**If at any time before the security deposit is refunded to the contractor, it shall appear to the Engineer-in-charge or his subordinate in charge of the work that any work has been executed with unsound imperfect, or unskillful workmanship or with materials of inferior quality; or that any materials or articles provided by him for the execution of the work are unsound, or of a quality inferior to that contracted for, or other- wise not in accordance with the contract, it shall be lawful for the Engineer-in-charge to intimate this fact in writing to the contractor and them notwithstanding the fact that the work, materials or articles complained of may have been inadvertently passed, certified and paid for, the contractor shall be bound forthwith to rectify, or remove and reconstruct the work so specified in whole or in part as the case may require, or if so required shall remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost; and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in the written intimation aforesaid, the contractor shall be liable to pay compensation at the rate of one percent on the amount of the tender for every day not exceeding ten days, during which the failure so continue and in the event of any such failure as aforesaid the Engineer-in-charge may rectify or remove and re-execute the work or remove and replace the materials or articles complained of or as the case may be at the risk and expense in all respects of the contractor, should the Engineer-in-charge consider that any such inferior work or materials as described above may be accepted or made use of it; shall be within his discretion to accept the same at such reduced rates along with the appropriate penalty as the Commissioner may deem fit. The period to be counted from that date of final completion and handing over of the work to the Municipal Corporation during which the contractor is so liable for any defects in the work shall be the Defects Liability Period shown in the attached Memorandum.

**CLAUSE-23:-** All works to be executed under the control shall be executed under the directions and subject to the approval in the respects of the Engineer In Charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

### **CLAUSE-24:- CONTINGENT FEE :**

1. The Contractor warrants that he has not employed any person to solicit or secure the contract upon any agreement for a commission, percentage, brokerage or contingent fee. Breach of this warranty shall give the Municipal Commissioner the right to cancel the contract or to take any other measure as the Municipal Commissioner may deem fit. The warranty does not apply to commissions payable by the contractor to establish commercial or selling agent for the purpose of securing business.

2. No officer, employer of the Municipal Corporation be admitted to any share or part of this contract or to any benefit that may rise there from.

**CLAUSE-25:- OVERPAYMENT AND UNDERPAYMENT :**

Whenever any claim fourths payment of a sum to the Municipal Corporation arises out of or under this Contract against the contractor the same may be deducted by the Municipal Corporation from any sum then due or which at any time thereafter may become due to the contractor under this contract and failing that under any other contract with the Municipal Corporation or from any sum due to the contractor with the Municipal Corporation (which may be available with Municipal Corporation), or from his retention money, or he shall pay the claim on demand. The Municipal Corporation reserves the right to carry out post payment audit and technical examination of the final bill including all supporting vouchers, abstracts, etc.

The Municipal Corporation further reserves the right to enforce recovery of any over payment when detected not withstanding the fact that the amount of the final bill may be included by the Contractor.

If as a result of such audit and technical examination any over payment is discovered in respect of any work done by the Contractor or alleged to have been done by him under the contract, it shall be recovered by the Municipal Corporation from the contractor by way of all the means prescribed above or if any under payment is discovered by the Municipal Corporation, any amount due to the contractor under this contract or under payment may be adjusted against any amount then due or which may at any time thereafter become due before payment is made to the contractor from him to the Municipal Corporation on any other contract account whatsoever.

**CLAUSE-26:- LIEN :**

If, at any time, there should be evidence of any lien or claim for which owner might have become liable and which is chargeable to the contractor, the owner shall have the right to retain out of any payment then due or thereafter to become due an amount sufficient to completely indemnify the owner against such lien or claim or if such lien or claim be valid the owner may be or become due and payable to the contractor. If any lien or claims remaining, unsettled after all payments are made, the contractor shall refund or pay to the owner all money that the latter may be compelled to pay in discharging such lien or claim including all cost and reasonable expenses.

**CLAUSE-28:- MATERIALS OBTAINED FROM DISMANTLING :**

If the contractor, in the course of execution of work is called upon to dismantle any part for reasons other than on account of bad or imperfect work, the materials obtained from dismantling will be the property of the A.M.C. and will be disposed of as per instruction of Engineer-in-charge in the best interest of the A.M.C.

**CLAUSE-29:- SCHEDULE OF QUANTITIES AND EXTRA ITEMS :**

**A. Schedule of Quantities :**

Variations in the quantities of work in schedule of quantities shall not vitiate the contract. The rates quoted for the individual items shall apply for the quantities of work increased or decreased upto any extent.

**B. Extra Items :**

Extra Items of work shall not vitiate the contract. The contractor shall be bound to execute extra items of work as directed by the Engineer-in-charge. The rates for extra items shall be derived from the current S.O.R used in this tender items plus/minus quoted premium of tender. If the rate of extra item is not available in S.O.R. it will be derived on prevailing market rate.

**CLAUSE-30:- ABNORMAL RATES :**

Contractor is expected to quote rate for each item after careful analysis of cost involved for the performance of the completed item considering all specifications and conditions of contract. This will avoid loss of profit or gain in case of curtailment or change or specification for any item. In case it is notice that the rates quoted by a tenderer for any item is usually high or unusually low, it will be sufficient cause

for rejection of tender unless the A.M.C. is convinced about the reasonableness of the rates on scrutiny of the analysis for such rate to the furnishing by the tenderer or demand.

**CLAUSE-31:- ACTION AND COMPENSATION IN CASE OF BAD WORKMANSHIP :**

If it shall appear to the Engineer-in-charge that any work has been executed with materials of inferior description, or quality or are unsound or with unsound imperfect or unskilled workmanship or otherwise not in accordance with the contract shall, no demand in writing from Engineer-in-charge or his authorized representative specifying the work, materials or articles complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for forth with rectify or remove and reconstruct the work, specified and in the event of failure to do so within a period to be specified by Engineer-in-charge in his aforesaid demand, contractor shall be liable to pay compensation at the rate of one (1) percent of the tendered cost of work for every Ten (10) days limited to a maximum of Ten (10%) Percent of the value of work while his failure to do so continue and in the case of any such failure the Engineer-in-charge may on expiry of the notice period rectify and remove and re-execute the work or remove and replace with other at the risk and cost of the Contractor. The decision of the Engineer-in-charge as to any question arising under this clause shall be final and conclusive

**CLAUSE 33: DISPUTE TO BE REFERRED TO TRIBUNAL to be read as**

**DISPUTE TO BE REFERRED TO ARBITRATOR.**

- (1) The disputes relating to this contract, so far as they relate to any of the following matters, whether such disputes arise during the progress of the work or after the completion or abandonment thereof, shall be referred an independent Arbitrator appointed by AMC as far possible in consultation with the agency if it is necessary and such disputes shall be settled in accordance with the arbitration and conciliation Act. 1996.
  - (i) The rates of payment under clause 5 for any tools, materials and stores, in or upon the works of the site thereof or belonging to the contractor or procured by him and intended to be used for execution of the work or any part thereof possession of which may have been taken by the Engineer-in-charge under the said clause –5.
  - (ii) The reduction in rates made by the Engineer-in-charge under clause 9 from the items of works not accepted as completed fully in accordance with the sanctioned specifications.
  - (iii) The rate of part of payment for any class of work which is included in the additional or altered work carried out by the contractor in accordance with the instructions of the Engineer-in-charge under clause 14 and the rates for which is to be determined under the said clause 14.
  - (iv) The rates of payment for materials already purchased or agreed to be purchased by the contractor before receipt of notice given by the Engineer-in-charge under clause 15 and/or amount of compensation payable to the contractor under the said clause for loss in respect of such materials.
  - (v) The amount of compensation which the contractor shall be liable to pay under clause 17 in the event of this failure to rectify, remove or reconstruct the work within the period specified in the written intimation or the amount of expenses incurred by the Engineer-in-charge under the said clause 17 in rectifying, removing or re-executing the work or in removing and replacing the materials or articles complained of.
  - (vi) The reduction of rates as may be fixed by the Engineer-in-charge under clause 17 for the inferior work or materials as accepted or made use of.
  - (vii) The amount of compensation payable by the contractor for damages as estimates and assessed under clause 23.
  - (viii) The amount payable to the contractor for the work carried out under clause 33 in accordance with the instructions and the requirement of the Engineer-in-charge in case where there are no specifications.

2. The awards declared by the arbitrator shall be speaking award giving reasons and calculations to every item of claims. The decision will have to be implemented by all the concerned.
3. In case of dispute leading to the contractor or Ahmedabad Municipal Corporation approaching on Court of Law. It shall be within the jurisdiction where the site of work is situated.

The reference to arbitration proceeding under this clause shall not:

- i) Entitle the contractor to stop the Affect the right of the Engineer-in-charge under clause 5 to take possession of all or any tools, plants, materials and stores in or upon the works of site thereof belonging to the contractor or procured by him and intended to be used for the execution of the work or any part thereof.
- ii) Preclude the Engineer-in-charge from utilizing the materials purchased by the contractor in any work or from removing such materials to other places, during the period the work is stopped or suspended in pursuance, of notice given to the contractor under clause 15.
- iii) progress of the work or the carrying out the additional or altered work in accordance with the provisions of clause 14 or as the case may be, of clause 33.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

**AHMEDABAD MUNICIPAL CORPORATION**

**Section III**

**FORM OF BID AND APPENDIX TO BID**

**A: FORM OF BID**

(The Appendix forms part of the Bid. Bidders are required to fill up all the blanks in the form of Bid)

Name of the contract: **“Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”**

**To,**  
Municipal Commissioner  
Ahmedabad Municipal Corporation  
Ahmedabad,  
Gujarat

Dear Sir,

1. Having examined the Conditions of Contract, Specifications, Bill of Quantities, Drawings and Addenda No. \_\_\_\_\_ for the execution of the above named works, we, the undersigned, offer to execute and complete such works and remedy any defects therein in conformity with the Conditions of Contract, Specifications, Bill of Quantities, Drawings and Addenda for the sum of Rs \_\_\_\_\_ (Rupees \_\_\_\_\_)

My/our offer works out as under:

Amount put to tender \_\_\_\_\_ Amount put to tender Rs. \_\_\_\_\_

Add \_\_\_\_\_ % above Deduct \_\_\_\_\_ % below

%(in words) \_\_\_\_\_ %(in words) \_\_\_\_\_

Net Amount Net Amount

In figure: Rs. \_\_\_\_\_ In figure: Rs. \_\_\_\_\_

2. We acknowledge that the Appendix to Bid forms part of our Bid.
3. We undertake, if our Bid is accepted, to commence the Works on Site within the period stated in the Appendix to Bid hereto after receipt of an order of the Engineer's notice to commence, and to complete and deliver the sections and the whole of the Works comprised in the Contract within the period stated in the Appendix to Bid hereto.
4. If our Bid is accepted, we will furnish Performance Security (ies) in the form of Bank Guarantee(s) to be jointly and severally bound on us in accordance with the Conditions of Contract.
5. We agree to abide by this Bid for the period of one hundred and twenty (120) days after the date of submission of tender, and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.



7. We understand that you are not bound to accept the lowest or any Bid you may receive.
8. All the partners of our Joint Venture are legally and severally bound by this Bid<sup>1</sup>.
9. Municipal Commissioner, Ahmedabad has right to reject any or all bids without giving any reason.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 2017

Signature \_\_\_\_\_

in the capacity of \_\_\_\_\_ duly authorised<sup>2</sup> to sign Bid for and on behalf of

---

Address (in block capitals)

---

---

Name of Witness \_\_\_\_\_

Occupation of the Witness \_\_\_\_\_

Address of Witness

---

Signature of Witness \_\_\_\_\_

1. To be deleted if the bidder is not a Joint Venture.

2 Certified copy of Power of Attorney/Authorisation for signature shall be furnished by the Bidder in accordance with Clause 20 of Instruction to Bidders (Section I).

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

## B.APPENDIX TO BID

Sr No.	Items	Conditions of Contract Clause / Sub Clause	Particular Conditions for this Contract
	<b>Name of Work</b>		<b>“Pavement Marking with Hot Applied Thermoplastic Paints, Sign Boards and Various Road Safety Furniture Items in Shahibaugh Ward of Central Zone of Ahmedabad (ARC Tender)”</b>
1	Earnest Money Deposit		<b>Rs. 9580</b> to be submitted in the form of D.D. in favour of Municipal Commissioner, Ahmedabad. It will be release along with final bill.
2	Amount of Security Deposit (Initial Performance Security)		As it is Empanel tender, SD amount 5% will be deducted from each Running Bill and Final Bill of executed amount. It will be released after successfully completion of Defect liability Period.
3	Tender validity period		120 days from the date of opening of price bid of the tender
4	Address		1. The Employer is : Municipal Commissioner Ahmedabad Municipal Corporation. Sardar Patel Bhavan, Dana pith, AHMEDABAD – 380 001 2. Name of authorized Representative/Engineer- in-charge : Additional City Engineer (Central Zone) AMC
5	Language ability of Contractor’s representative		English
6	Time for commencement of works		15 days
7	Time of completion		<b>12 months (Excluding monsoon)</b>
8	Liquidated damages		Liquidated damages for delay in completion of work will be 10% of the amount of remaining work original or extended time limit.
9	Deduction of Retention Money from each RA Bill		<b>Retention @ 2% of the value of work done will be deducted from each RA bill. It will be released along with release of payment of Final Bill.</b>  As per MC circular additional 5% amount of the work done shall be hold by AMC till the successful completion of the works. ( 5% released with final bill)
10	Place of Arbitration		Ahmedabad
11	Language of Arbitration		English
12	Notice to Employer and Engineer		Municipal Commissioner, AMC or his duly appointed authority.

13	Amount to be deducted from each bill for labour welfare fund (non-refundable)	<b>Welfare Cess Act - 1996</b>	1 % of bill amount
14	Performance Security (Defect Liability Bond)		SD amount 5% will be deducted from each Running Bill and Final Bill of executed amount. It will be released after successfully completion of Defect liability Period.

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

## SECTION-IV

### FORM OF BID SECURITY (BANK GUARANTEE)

Where as M/s.....  
(Hereinafter called the Tenderer) is desirous and preferred to tender for works in accordance with the term and conditions of tender for the work of.....

1. Therefore. We hereby affirm that -we are guarantors on behalf of the Tenderer up to total rupees.....(in words.....) Rs. (in figures) and we undertake to pay to Municipal Commissioner, Ahmedabad Municipal Corporation, A' bad Specified tip to his first written demand, without demur without delay and without the necessary of a previous of judicial or administrative procedures and without the necessity of a previous of judicial or administrative procedures and without the necessity to prove to the Bank the defects or short comings or debits of the contractor any sum within the limit of Rs.....
2. We further agree that the Guarantee herein contemned shall remain in full force and effect during the period that would be taken for the acceptance of tender.  
However unless a demand of claim under this guarantee is made on its in writing on or before the {Date to be specified will not be less than 120 +28=148 (CLAUSE NO.17.2,Instruction to Bidders) days from the stipulated date of submission of the tender} we shall be discharge from all liabilities under the guarantee thereafter
3. We undertake not to revoke the guarantee during it currency except with the previous consent of the Municipal Commissioner, Ahmedabad Municipal Corporation, A' bad in writing.
4. We lastly undertake not to revoke the guarantee for any charge in constitution of the Tenderer or of the Bank.

Date:

Signature & Seal of Guarantor .....  
Bank Address .....

5. The contractors shall have to furnish income tax clearance certificate before his tender is accepted and intimate assessment number and ward under which he is assessed.
6. Copies of certificate as regards previous experience, if any, must accompany the tender.
7. List of approved banks - ALL NATIONLISED BANKS and List of approved banks by A.M.C. as mentioned in Sr. No. 18 Information to Tenderer

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

## FORM OF AGREEMENT

THIS AGREEMENT made the \_\_\_\_ day of \_\_\_\_\_, 200\_ between Ahmedabad Municipal Corporation .....(here in after called “the Employer”) of the one part and M/s. \_\_\_\_\_ (here in after called “the Contractor”) of the other part.

WHEREAS the Employer is desirous that certain works should be executed by the Contractor, viz. \_\_\_\_\_ and has accepted the bid by the contractor for the execution and completion of such works and the remedying of any defects therein at a contract price of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_).

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
  - a) the Letter of Acceptance;
  - b) the said Bid and Appendix to Bid;
  - c) the General Conditions of Contract
  - d) the Technical Specifications;
  - e) the Priced Bill of Quantities; and
  - f) other documents forming part of the contract.
3. In consideration of the payments to be made by the Employer to the Contractor as here in after mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract. IN WITNESS whereof the parties hereto have caused this Agreement to be executed the day and year first before written.

Signed, sealed, and delivered by the said Employer and the Contractor in the presence of:

**WITNESSES:**

On behalf of <b>Ahmedabad Municipal Corporation</b>	On behalf of M/s.
1.	1.
2.	2.

Binding Signature of the Employer :

Binding Signature of the Contractor :

**Sample Form for updating - qualification information**

**Seal and Signature of the Bidder**

**Date:**

**Additional City Engineer**  
(Central Zone)  
Ahmedabad Municipal Corporation

## **Section –V TECHNICAL SPECIFICATION**

### **ITEM No.1 Thermoplastic paint**

Road marking with hot applied thermoplastic paints strictly of Automark - "Specsmark", Asian Paints-"Apcomark", Katalline- "Traffix O" or Berger Paints-"Sigmark" with reflectorising glass beads of Automark-"Autolux Gold", "SwEmpanelmento", "Sovitec" Asian Paints-Apcobids", "Potters" on bitumen surface providing and laying a hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250gms per sqm area, thickness of 2.5mm is excluding of surface applied glass beds as per IRC:35-2015. The finished surface to be level, uniform and free from streaks and holes. zebra patta /bump patta lane/center line/ edge line/cut patta. The white color marking should provide luminance coefficient on cement road shall be min 130 mcd/m<sup>2</sup>/lux and Asphalt road shall be min 100 mcd/m<sup>2</sup>/lux during the service life during the day time. The marking should meet the performance criteria for night time reflectivity, wet reflectivity and skid resistance as mentioned in the section-15 of IRC 35-2015. (As per approved R.A)

### **ITEM No.2 Thermoplastic paint Directional Arrow, Lettering (1 word - up to 4 letters), or any kind of Artwork etc.**

Providing and laying Road marking with hot applied thermoplastic paints strictly of Automark - "Specsmark", Asian Paints-"Apcomark", Katalline- "Traffix O" or Berger Paints-"Sigmark" with reflectorising glass beads of Automark-"Autolux Gold", "SwEmpanelmento", "Sovitec" Asian Paints-Apcobids", "Potters" on bitumin surface providing and laying a hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beds as per IRC:35. The finished surface to be level, uniform and free from streaks and holes.) Directional Arrow, Lettering (1 word - up to 4 letters), or any kind of Artwork etc. (which shall maximum size upto 2.75 Sqmt out to out) Item shall include providing Stencils for lettering, direction arrow signages, and as per requirement. including cleaning, required maintenance, etc. complete pre and post work. Cost shall also include laying with applicator machine & operating boilers, Skilled Labours for road marking, and Un-Skilled labours for barricading/protection, traffic diversion, and it shall also include wastage of material, etc. Contractor shall be responsible to run his own thermoplastic applicator machine & supply necessary diesel, gas, fuel, etc, also it will be his responsibility to Operate preheater. for good quality of workmanship as instructed by Engg-in-charge. Agency has to quote rate on Nos. work basis which shall include following manpower and machinery for each set). (As per approved R.A)

### **MoRT&H Cluses 803 ROAD MARKINGS**

#### **803.1 Scope**

The colour, width and layout of road markings shall be in accordance with the Code of Practice for Road Markings with paints, IRC:35-2015, and as specified in the drawings or as directed by the Engineer.

#### **803.2 Materials**

Road markings shall be of ordinary road marking paint, hot applied thermoplastic compound, or reflectorised paint as specified in the item and the material shall meet the requirements as specified below.

#### **803.4 Hot Applied Thermoplastic Road Marking**

#### 803.4.1 Thermoplastic Material

##### 803.4.1.1 General :

The thermoplastic material shall be homogeneously composed of aggregate, pigment, resins and glass reflectorizing beads. The colour of the compound shall be white or yellow OS colour No. 356) as specified in the drawings or as directed by the Engineer.

##### 803.4.1.2 Requirements

- (1) **Composition:** The pigment, beads, and aggregate shall be uniformly dispersed in the resin. The material shall be free from all skins, dirt and foreign objects and shall comply with requirements indicated in Table 800-9.

TABLE 800-9. Proportions of constituents of marking material (Percentage by weight)

Component	White	Yellow
Binder	18.0 min.	18.0 min.
Glass Beads	30-30	30-30
Titanium Dioxide	10.0 min.	-
Calcium Carbonate and Inert Fillers	42.0 max.	See Note below
Yellow Pigments	-	See Note below

**Note:** Amount of yellow pigment~ calcium carbonate and inert fillers shall be at the option of the manufacturer, provided all other requirements of this Specification are met.

- (ii) **Properties:** The properties of thermoplastic material, when tested in accordance with ASTM D36/BS-3262-(Part 1), shall be as below:
- (a) **Luminance :**  
White: Daylight luminance at 45 degrees-65 per cent min. as per AASHTO M 249  
Yellow: Daylight luminance at 45 degrees-45 per cent min. as per AASHTO M 249
- (b) **Drying time:** When applied at a temperature specified by the manufacturer and to the required thickness, the material shall set to bear traffic in not more than 15 minutes.
- (c) Skid resistance: not less than 45 as per BS: 6044.
- (d) Cracking resistance at low temperature: The material shall show no cracks on application to concrete blocks.
- (e) Softening point 102.5 :t 9.50 C as per ASTM D 36.
- (f) Flow resistance Not more than 25 per cent as per AASHTO M 249.
- (g) Yellowness Index (for white thermoplastic paint): not more than 0.12 as per AASHTO M 249
- (iii) **Storage Life :** The material shall meet the requirements of these Specifications for a period of one year. The thermoplastic material must also melt uniformly with no evidence of skins or unmelted particles for the one year storage period. Any material not meeting the above requirements to be replaced by the manufacturer/ supplier/Contractor.
- (iv) **Reflectorisation :** Shall be achieved by incorporation of beads. the grading and other properties of the bonds shall be as specified in Clause 803.4.2.
- (v) **Marking :** Each container of the thermoplastic material shall be clearly and indelibly marked with the following information:
1. The name, trade mark or other means of identification of manufacturer



2. Batch number
  3. Date of manufacture
  4. Colour (white or yellow)
  5. Maximum application temperature and maximum safe beating temperature.
- (vi) **Sampling and testing:** The thermoplastic material shall be sampled and tested in accordance with the appropriate ASTM/BS method. The Contractor shall furnish to the Employer a copy of certified test reports from the manufacturers of the thermoplastic material showing results of all tests specified herein and shall certify that the material meets all requirements of this Specification.

#### **803.4.2 Reflectorized glass beads**

##### **803.4.2.1 General :**

This Specification covers two types of glass beads to be used for the production of reflectorized pavement markings

Type I beads -are those which are a constituent of the basic thermoplastic compound vide Table 800-9 and Type 2 beads are those which are to be sprayed on the surface vide Clause 803.6.4.

803.4.2.2 The glass beads shall be transparent, colourless and free from milkiness, dark particles and excessive air inclusions.

These shall conform to the requirements spelt out in Clause 803.4.2.3.

##### **803.4.2.3 Specific requirements**

a) **Gradation:** The glass beads shall meet the gradation requirements for the two types as given in Table 800-10

TABLE 800-10 Gradation Requirements For Glass Bead

Sieve size	Percent retained	
	Type I	Type II
1.18 mm	0 to 3	----
850 micron	5 to 20	0 to 5
600 -do-	---	5 to 20
425 -do-	65 to 95	--
300 -do-	--	30 to 75
180 -do-	0 to 10	10 to 30
below 180 micron		0 to 15

b)**Roundness:** The glass beads shall have a minimum of 70 per cent true spheres.

c)**Refractive index:** The glass beads. shall have a minimum reflective index of 1.50.

d)**Free flowing properties:** The glass beads shall be free of hard lumps and clusters and shall dispense readily under any conditions suitable for paint striping. They shall pass the free flow-test.

##### **803.4.2.4 Test methods:**

The specific requirements shall be tested with the following methods:

(i)Free- flow test: Spread 100 grams of beads evenly in a 100 mm diameter glass dish. Place the dish in a 250mm inside diameter desiccator which is filled within 25 mm of the top of a desiccator plate with sulphuric acid water solution ( specific gravity 1.10). Cover the desiccator and let it stand for 4 hours at 20 to 29 degree C. Remove sample from desiccator, transfer beads to a pan and inspect for lumps or clusters. Then pour beads into a clean, dry glass funnel having a 100mm stem and 6 nun orifice. If necessary, initiate flow by lightly tapping the funnel. The glass spheres shall be essentially free of lumps and clusters and shall flow freely through the funnel.

(ii) The requirements of gradation, roundness and refractive index of glass beads and the amount of glass beads in the compound shall be tested as per BS 6088 and BS 3262 (Part 1).

(iii) The Contractor shall furnish to the Employer a copy of certified test reports from the manufacturer of glass beads obtained from a reputed laboratory showing results of all tests specified herein and shall certify that the material meets all requirements of this Specification. However, if so required, these tests may be carried out as directed by the Engineer.

#### **803.4.3 Application properties of thermoplastic material**

803.4.3.1 The thermoplastic material shall readily get screeded/ extruded at temperatures specified by the manufacturers for respective method of application to produce a line of specified thickness which shall be continuous and uniform in shape having clear and sharp edges.

803.4.3.2 The material upon heating to application temperatures shall not exude fumes, which are toxic, obnoxious or injurious to persons or property.

#### **803.4.4 Preparation**

(i) The material shall be melted in accordance with the manufacturer's instructions in a heater fitted with a mechanical stirrer to give a smooth consistency to the thermoplastic material to avoid local overheating. The temperature of the mass shall be within the range specified by the manufacturer, and shall on no account be allowed to exceed the maximum temperature stated by the manufacturer. The molten material should be used as expeditiously as possible and for thermoplastic material which has natural binders or is otherwise sensitive to prolonged heating, the material shall not be maintained in a molten condition not more than 4 hours.

(ii) After transfer to the laying equipment, the material shall be maintained within the temperature range specified by the manufacturer for achieving the desired consistency for laying.

#### **803.5 Reflectorised Paint--deleted**

Reflectorised paint, if used, shall conform to the Specification by the manufacturers and approved by the Engineer. Reflectorising glass beads for reflectorising paints where used shall conform to the requirement of Clause 803.4.2.

#### **803.6 Application**

803.6.1 Marking shall be done by machine. For locations where painting cannot be done by machine, approved manual methods shall be used with prior approval of the Engineer. The Contractor shall maintain control over traffic while painting operations are in progress so as to cause minimum inconvenience to traffic compatible with protecting the workmen.

803.6.2 Where the compound is to be applied to cement concrete pavement, a sealing primer as recommended by the manufacturer, shall be applied to the pavement in advance of placing of the stripes to ensure proper bonding of the compound. On new concrete surface any laitance and/or curing compound shall be removed before the markings are applied.

803.6.3 The thermoplastic material shall be applied hot either by screeding or extrusion process. After transfer to the laying apparatus, the material shall be laid at a temperature within the range specified by the manufacturer the particular method of lying being used. The paint shall be applied using a screed or extrusion machine.

803.6.4 The pavement temperature shall not be less than 10°C during application. All surfaces to be marked shall be thoroughly cleaned of all dust, dirt/grease, oil and all other foreign matter before application of the paint.

The material, when formed into traffic stripes, must be readily renewable by placing an overlay of new material directly over an old line of compatible material. Such new material shall so bond itself to the old line that no splitting or separation takes place.

Thermoplastic paint shall be applied in intermittent or continuous lines of uniform thickness of at least 2.5 mm unless specified otherwise. Where arrows or letters are to be provided, thermoplastic compound may be hand-sprayed. In addition to the beads included in the material, a further quantity of glass beads of Type 2, conforming to the above noted Specification shall be sprayed uniformly into a mono-layer on to the hot paint line in quick succession of the paint spraying operation. The glass beads shall be applied at the rate of 250 grams per square meter area.

803.6.5 The minimum thickness specified is exclusive of surface applied glass beads. The method of thickness measurement shall be in accordance with Appendices B and C of BS - 3262 (Part 3).

803.6.6 The markings shall be done to accuracy within the tolerances given below:

- i) Width of lines and other markings shall not deviate from the specified width by more than 5 percent.
- ii) The position of lines, letters, figures, arrows and other markings shall not deviate from the position specified by more than 20 mm
- iii) The alignment of any edge of a longitudinal line shall not deviate from the specified alignment by more than 10 mm in 15 m.
- iv) The length of segment of broken longitudinal lines shall not deviate from the specified length by more than 150 mm.

In broken lines, the length of segment and the gap between segments shall be as indicated on the drawings; if these lengths are altered by the Engineer, the ratio of the lengths of the painted sections shall remain the same.

**803.6.7 Properties of finished road marking**

The finished lines shall be free from ruggedness on sides and ends and be parallel to the general alignment of the carriageway. The upper surface of the lines shall be level, uniform and free from streaks.

- (a) The stripe shall not be slippery when wet.
- (b) The marking shall not lift from the pavement in Freezing weather.
- (c) After application and proper drying, the stripe shall show no appreciable deformation or discoloration under traffic and under road temperatures up to 60 degree C.
- (d) The marking shall not deteriorate by contact with sodium chloride, calcium chloride or oil drippings from traffic.
- (e) The stripe or marking shall maintain its original dimensions and position. Cold ductility of the material shall be such as to permit normal movement with the road surface without chopping Or cracking.
- (f) The colour of yellow. Marking shall conform to IS Colour No. 356 as given in IS: 164.

**Performance Criteria:** The criteria given here under are meant to be used on white colour pavement marking only.

**1.1 Day Time Visibility**

The luminance coefficient under diffuse illumination  $Q_d$  for road marking on

Cement road (Qd) shall be minimum of 130 mcd/m<sup>2</sup>/lux during the expected life service time  
 Asphalt road (Qd) , shall be minimum of 100 mcd/m<sup>2</sup>/lux during the expected life service time  
 Testing method shall be according to Annexure D.

## 1.2 Night Time Visibility

### (i) Dry retro-reflection

Dry retro-reflection shall be compliant with Table (i) and measured in accordance with the method described in Annexure E.

### (i) Initial and Minimum Performance for Dry Retro Reflectivity during Nighttime

S. no	Design Speed	(RL) Retro –Reflectivity (mcd/m <sup>2</sup> /lux)	
		Initial (7 Days)	Minimum Threshold Level (TL) and warranty period Required up to 2 years
1	Up to 65	200	80
2	65-100	250	120
3	Above 100	350	150

### (i) Wet retro-reflection

Wet retro-reflection shall be compliant with Table (ii) and measured in accordance with the method described in Annexure E. irrespective of the design speed .In wet condition design speed does not have bearing on road marking

### (ii) Initial and Minimum Performance for Dry Retro Reflectivity during Nighttime

S. no	Design Speed	(Rw) Retro –Reflectivity (mcd/m <sup>2</sup> /lux)	
		Initial (7 days)	Minimum Threshold Level
1	100		50

## **SPECIAL TERMS AND CONDITIONS FOR THERMOPLAST PAINT WORK**

1) Agency should carry out such type of work by only using his owned Thermoplastic paint laying machine with temperature controller and automatic mixing arrangement of glass beads in required proportion.

2) After completion of the laying of thermoplastic paint work, guarantee for durability and reflectivity as per below given by the bidder in the writing.

Defect liability period for Thermoplastic paint shall be considered as follows:

1. For zebra / pedestrian crossing, stop line, letters and arrows: 1 Years from the date of execution.  
 For all other Thermoplastic paint: 2 Years.

3) Agency who carry out such type of work shall have an experience of carrying out similar type of work.

4) Test certificates as per M.O.S.T. Specification for Road and Bridge works Clause 803.4.1.2(vi) should be furnished of reputed laboratory before starting the work.

### **803.6.8 Measurements for Payment**

803.6.8.1 The painted markings shall be measured in sq. meters of actual area marked (excluding the gaps, if any).

803.6.8.2 In respect of markings like directional arrows and lettering, etc., the measurement shall be by numbers.

Contractor shall have to Submit the manufacture test certificate before Starting the work at no Extra cost

Contractor Shall have to Submit the test report of Both thermoplastic paint and glass beads from approved Laboratory for paint & glass beads at no extra cost before producing bill and then after on end when asked by AMC.

Contractor shall have to submit the filled form as mentioned above in Soft (Signed & scanned) and two hard copies.

### **USAGE CONFORMANCE CERTIFICATE**

**CLIENT NAME** \_\_\_\_\_

**CONVERTER NAME** \_\_\_\_\_

**CONTRACTOR NAME** \_\_\_\_\_

**WORK ORDER DETAILS** \_\_\_\_\_

Details of the thermoplastic painting work is carried out using Name of Manufacturer

sr no.	Type of work with location	size	Qty	Remarks

Certified that the above Hot Applied Thermoplastic Road Marking have been manufactured using Brand Name & Product name of thermoplastic material & Glass bid (according to ASTM D 36/BS3262) and are covered by the

Warranty No.....Dated.....

Which will expire on dated.....

**Name of Thermoplastic Material Manufacturer**

**Name of Converter**

**Name of Thermoplastic Product**

**Authorized Signatory**

**Authorized Signatory**

#### **803.6.9 Rate**

The Contract unit rate for road markings shall be payment in full compensation for furnishing a labour, materials, tools, equipment, including all incidental costs necessary for carrying out the work at the site conforming to these Specifications complete as per the approved drawing(s) or as directed by the Engineer and all other incidental costs necessary to complete the work to these Specifications.

### ITEM NO.3 PRIMER

Providing and applying primer before hot applied thermoplastic paints marking on RCC road surface, which must ensure better adhesion of thermoplastic paint to the surface and also increase paint durability, including all material, manpower, tools and machinery required for work, with all required safety standards to work in running traffic conditions, as per standards and as instructed by engg in charge. Agency has to quote rate on Sq.Mt. work basis.

**Rate:**

The contract unit rate for Providing and applying primer before hot applied thermoplastic paints marking on RCC road surface shall be payment in full compensation for furnishing all labor, materials, tools, equipment including incidental costs necessary for carrying out the work at site conforming to the specifications complete as per approved drawings or as directed by the Engineer.

### ITEM NO.4 C.R. Base Road Marking Paint

Providing & applying C.R. Base Road Marking Painting lines, dashes, arrow, letters etc. on Road in two coats on new Work with ready mixed road marking paint conforming to IS:164 and AASHTO standard M-248-90 on concrete/ bituminous surface, including required additive/ solvent, providing safety cones, barricades, string, chalks or req. colour for line marking, etc. Cleaning the surface, removing of all dirt, dust & other foreign matter and clear the site as per engineer in charge. (As per approved R.A)

1. Over 10 Cm in Width
2. Up to 10 Cm in Width

**1.00 General**

The colour, width and layout of road markings shall be in accordance with the Code of Practice for Road Markings with paints, IRC : 35, and as specified in the drawings or as directed by the Engineer.

**2.00 Materials**

Road markings shall conform to. Gr Made I as per IS: 164.

**3.00 Workmanship**

**3.1 General:**

**3.1.1** The materials required for work of painting work shall be obtained directly from approved manufacturers or approved dealer and brought to the site in maker's drums, kegs etc. with seal unbroken.

**3.1.2** All materials not in actual use shall be kept properly protected, lids of containers shall be kept closed and surface of paint in open or partially open containers covered with a thin layer of turpentine to prevent formation of skin. The materials which have become stale or flat due to improper and long storage shall not be used. The paint shall be stirred thoroughly in its container before pouring into small containers. While applying also the paint shall be continuously stirred in smaller container. No left over paint shall be put back into stock tins. When not in use, the containers shall be kept properly closed.

**3.1.3** If for any seasons, thinning is necessary, the brand of thinner recommended by the manufacturer shall be used.

**3.1.4** The surface to be painted shall be thoroughly cleaned and dusted. All rust, dirt and grease shall be thoroughly removed before painting is started. No painting on exterior or other exposed parts of

the work shall be carried out in wet, damp or otherwise unfavorable weather and all the surfaces shall be thoroughly dry before painting work is started.

- 3.1.5.** The road marking shall preferably be laid with appropriate road marking machinery/ or by brush as specified by the Engineer In charge. Laying thickness of road marking paint shall be as specified by the Engineer.

**4.00 Mode of Measurement**

- A) Over 10 Cm in Width –The rate shall be for a unit of one Sq.mt  
B) Up to 10 Cm in Width the rate shall be for a unit of running meter.

**Special Note:**

(1) Contractor shall have to submit the manufacture test certificate of retro reflective sheet before Starting the work at no Extra cost

- (1) Contractor Shall have to Submit the test report of retro reflective sheet from Govt. approved Laboratory testing of sheeting at no extra cost before producing First R.A bill and then after on end when asked by AMC. The contractor shall not be paid extra for same.

- (2) Contractor shall have to submit the filled form as mentioned below in Soft (Signed & Scanned) and two hard copies

**USAGE CONFORMANCE CERTIFICATE**

**CLIENT NAME** \_\_\_\_\_

**CONVERTER NAME** \_\_\_\_\_

**CONTRACTOR NAME** \_\_\_\_\_

**WORK ORDER DETAILS** \_\_\_\_\_

Details of the Providing & applying C.R. Base Road Marking Painting work is carried out using Name of Manufacturer

Sr no.	Type of work with location	size	Qty	Remarks

Certified that **Providing & applying C.R. Base Road Marking Painting work** have been manufactured using Brand Name of (IS:164 and AASHTO standard M-248-90) and are covered by the Warranty No.....Dated.....  
which will be expired on dated.....

**Name of C.R. Base Road Marking Paint Material Manufacturer**

**Name of Converter**

**Name of C.R. Base Road Marking Paint Product**

**Authorized Signatory**

**Authorized Signatory**

**Seal and Signature of the Bidder**

**Additional City Engineer**  
(Central Zone)

**Date:**

Ahmedabad Municipal Corporation

**ITEM NO. 5     Standard Delineator:** Providing and fixing of Standard Metal Delineator consisting of minimum retro reflective unit exposed area of 330 cm<sup>2</sup> white color, full cube corner micro prismatic non-metallic retro reflective sheeting on each side conforming with IRC 67 2012 and meeting the coefficient of retro reflection values as per ASTM D 4956 Type XI table specification. The delineator shall be painted with powder coat of minimum 40 microns thickness, on top of which retro reflective sheeting shall be pasted on both sides. The structure shall be manufactured in roll forming process and shall have height not less than 800 mm above the ground, width not less than 100 mm and shall extend not more than 300mm below the ground while being installed. height of sheeting should be minimum 150mm whereas width of sheeting should not be less than 75mm (should be placed every alternative 15cm). The front and back faces of the delineator should be curved with a radius of not more than 200 mm and with delta angle (or central angle of curve) lying between 20° and 30°, to increase the visibility of the delineator for vehicles moving in continuous curves. The delineator shall have grooves across the length to make the reflective sheets vandal-proof. The delineator is meant for application on gaps in median, traffic islands, dangerous bends, roundabouts, narrow bridges etc. or as desired by site engineer(As per SOR AHMEDABAD 2023-24 Item code 26166)

**ITEM NO. 6     AFP (Aluminum Backed Flexible Prismatic):** Providing and fixing Aluminum backed flexible prismatic sheeting,consisting of yellow/black colored flexible prismatic sheet with non mettalic prismatic lens as retro reflective elements and confirming to ASTM D4946 Type VI specifications for reboundable retro reflective sheeting. This flexible prismatic sheeting shall be of 30 cm width and laminated at the back with a 50 micron Aluminum(Al) foil with pressure sensitive adhesive and liner. Further, this flexible prismatic sheeting shall have screen printed arrow/slant line pattern in black color in a continuous roll format. The AFP sheeting,with the liner removed, shall be applied with a neoprene contact adhesive with a Polychloroprene base,viscosity of 200-450 cp and solid content of 20-30%. Once applied, the edges of the product shall be sealed all around with a two-part epoxy based structural adhesive and shall be extremely resist to peel off. A test report from institutes like ARAI/CRRRI confirming to above mentioned flexibility and ASTM-D 4956-09 Type-VI retroreflectivity performance of the flexible prismatic sheeting used in AFP shall be submitted as directed by Engineer-In-Charge.( SOR 23-24 Item code 26165)

**ITEM NO. 7     Hazard Marker Sign: -** Providing and fixing sign boards made out of 2.0 mm aluminum sheet / 4 mm ACP (Aluminum composite Panel); size 90x30 cms. rectangular as per design of IRC-67-2012. Pretreated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorized with Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 1.8mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 Cms. for each leg including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting. (SOR AHMEDABAD 2023-24 Item code 26102C)



**ITEM No. 8 Solar Stud: Supplying of Solar Raised Pavement Markers made of polycarbonate molded body with circular shape, solar powered, LED self illumination in active mode, 360 degree illumination and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face in passive mode. The marker shall support a load of 20000 kg tested in accordance to ASTM D 4280. The marker should be resistant to dust and water ingress according to IP 65 standards and should withstand temperatures in the range of 0 C to 70 C. Color of lighting could be provided in red or yellow (amber) as per requirement and typical frequency of blinking is 1 Hz. There should be current losses of less than 20 micro-amperes at 2.4 V in sleepcharging mode to enhance the life of the marker and a full charge should provide for a minimum autonomy of 50 hours. The height, width and length of the marker shall not be less than 10 mm x 100 mm x 100 mm. Also, the surface diameter of the marker shall not be less than 100 mm respectively. The weight of the marker shall not exceed 0.5 Kilograms. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturers recommendation and complete as directed by the engineer(SOR AHMEDABAD 2023-24 Item code 26167)**

#### **14.1 Placement**

The **Solar Stud** shall be fixed to the road surface using the adhesives and the procedure recommended by the manufacturer. No nails should be used to fix the marker so that they do not pose safety hazard on the roads. Regardless of the type of adhesive used ,the markers shall not fixed if the pavement is not surface dry and on new asphalt concrete surface until the surface has been opened to traffic for period of not less than 14 hours. The portions of the Road surface to which marker is to be bonded by the adhesive shall be free of dirt, curing compound, grease, oil, moisture, loose or and any other material which would adversely affect the bond of the adhesive.

The adhesive shall be placed uniformly on the Cleaned pavement surface or on the bottom of the markers in a quantity. sufficient to result in complete coverage of the area of the contact of the better surface with no voids present at a slight excess after the better surface has been lightly pressed in place. For epoxy installations, excess adhesive around the edge of the marker, excess Adhesive on the pavement and adhesive on the exposed surfaces of the markers shall be immediately removed.

#### **14.2 Warranty and Durability**

The contractor shall obtain from the manufacturer a warranty for contractor held performance. In case the **Solar Stud** are displaced. damage get worn out or not performed compared to stipulated standards, the contractor would be required to replace all such **Solar Stud** within 15 days of the intimation from the Engineer at his own cost.

#### **14.3 Measurement of Payment**

The measurement of **Solar Stud** shall be in number of diff. types of **Solar Stud** supplied and fixed.

#### **14.4 Rate**

The contract unit rate for **Solar Stud** shall be payment in full compensation for furnishing all labour, materials, tools, equipment including incidental costs necessary for carrying out the work at site conforming to the specifications complete as per approved drawings or as directed by the Engineer

### USAGE CONFORMANCE CERTIFICATE

CLIENT NAME \_\_\_\_\_

CONVERTER NAME \_\_\_\_\_

CONTRACTOR NAME \_\_\_\_\_

WORK ORDER DETAILS \_\_\_\_\_

Details of the Solar Stud fixing work is carried out using Name of Manufacturer

Sr no.	Type of work with location	size	Qty	Remarks

**Certified that the Solar Stud fixing work have been manufactured using Brand Name of Solar Stud (According to ASTM D- 4280) and are covered by**

the Warranty No.....Dated.....

which will be expired on dated.....

Name of Solar Stud Manufacturer

Name of Converter

Authorized Signatory

Authorized Signatory

*Special Note: Contractor may submit a certificate of being authorized converter of approved manufacturers*

**ITEM No. 9 Providing and fixing Free Left Retro Reflective sign boards 2mm aluminum sheet / 4mm ACP (Aluminum composite Panel); size 80x60 cm plate as per design of IRC 67-2012 And Frame (25 x 25 x 3 mm) with logo in vertical Pole (65 NB, 3.3 Mt Height) . ACP sheet 3 mm Aluminum/4 mm ACP sheeting fixed with type XI class-c micro prismatic Grade sheeting as per IRC 67: 2022(ASTM D 4956-09) Retro reflective sheeting of Brand of 3M or Avery of size 0.75 M X 0.65 M lettering and signs as applicable with excavating Removing pavement(0.45x 0.45 x0.60)with Concreting Including form Work M25(0.45 x 0.45 x 0.60) etc. Transportation work including loading, unloading, uploading And Lead up to site. Installation and erection. charge(Including all installation and machinery and labors).Nothing shall be paid extra for carting from factory to the fixing site within AMC limit. The rate including contractor profit, overhead charge and Excluding GST etc.complete.(As per R.A)**

**ITEM No. 10 Tree Guard Sign:**

**Tree Guard sign :-Providing & fixing sign board made out of 2mm aluminium sheet / 3mm ACP (Aluminum composite Panel) , size 30cms diameter circle, pretreated with phosphating process and acid etching, painted with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with retro reflective sheeting as per latest M.O.S.T. specifications. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting (As per SOR AHMEDABAD 2023-24 Item code 26107C)**

### 1. Aluminium

Aluminium sheets used for Tree Guard sign shall be of smooth, hard and corrosion resistant aluminium alloy conforming to IS 736 - Material Designation 24345 or 1900.

### 2. Retro Reflective Sheeting

The retro reflective sheeting used on the signs shall consist of white or coloured sheeting having a smooth outer surface which has the property of retro reflection over its entire surface. It shall be weather resistant and exhibit colour fastness. It shall be new and unused and show no evidence of cracking, scaling, and pitting, blistering, edge lifting or curling and shall have negligible shrinkage or expansion. A certificate of having the sheeting tested for coefficient of retro reflection, daytime colour and luminance, shrinkage, flexibility, liner removal, adhesion, impact resistance, specular gloss and fungus resistance, 3 years outdoor weathering and its having passed these tests shall be obtained from International/Government Laboratory/Institute by the manufacturer of the sheeting and in case the certificate is obtained from international agency, it should also be obtained from Indian agency within 3 years of launching of product by the manufacture in abroad. Alternatively, a certificate conforming to ASTM Specification (D 4956-09) on artificial accelerated weathering requirements from a reputed laboratory in India can be accepted provisionally. In such a situation, the Municipal Commissioner, AMC/Client, if so desires, could seek for a performance guarantee which would be released after receipt of certificate meeting the requirement of three years outdoor weathering of the sheeting.

### 3. Description of sheet:

*Type IV High intensity micro-prismatic grade sheeting (HIP)*

This sheeting shall be of high intensity retro-reflective sheeting made of micro-prismatic retro-reflective element material coated with pressure sensitive adhesive. The retro-reflective surface after cleaning with soap and water and in dry condition shall have the minimum co-efficient of retro-reflection (determined in accordance with ASTM D 4956-09) as indicated in **Table 6.6**.

**Table 6.6 Acceptable Minimum Coefficient of Retro-Reflection for  
Type IV High Intensity Micro-prismatic Grade Sheeting<sup>A</sup>  
(Candelas Per Lux Per Square Metre)**

Observation Angle	Entrance Angle	White	Yellow	Orange	Green	Pi	Blue	Brown
0.1° <sup>B</sup>	-4°	500	380	200	70	90	42	25
0.1° <sup>B</sup>	+30°	240	175	94	32	42	20	12
0.2°	-4°	360	270	145	50	65	30	18
0.2°	+30°	170	135	68	25	30	14	8.5
0.5°	-4°	150	110	60	21	27	13	7.5
0.5°	+30°	72	54	28	10	13	6	3.5

*A* Minimum Coefficient of Retro-reflection ( $R_A$ )(cd.lx<sup>-1</sup>.m<sup>-2</sup>).

*B* Values for 0.1° observation angles are supplementary requirements that shall apply only when specified by the purchaser in the contract or order.

When totally wet, the sheeting shall show not less than 90 percent of the values of retro-reflection indicated in above Table. At the end of 7 years, the sheeting shall retain at least 80 percent of its original retro-reflectance

**ITEM NO.11 Give Way Sign:** - Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 75 x 75 x 90 cm equilateral triangle plus 60 cm x 20cm rectangular additional plate as per design of IRC-67-2012. Pretreated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint; reflectorized with Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 3.6mtr long stand post of 75 x 75 x

6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:1:2 CC block of size 45 x 45 x 60 Cm for each leg. Including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

- **Add 2 nos. of L 32\*32 Angle Section holdfast size min 300mm length fixed perpendicular to each other and both end shall cut 50mm & cross bended 45 Degree. Barcode with Description (as per IRC 67-2022) shall be fixed in each signboard which can be scanable & changes should be done as per instruction of engineer incharge. No extra charge given for that.**

**ITEM NO.12 STOP Sign:** - Providing and fixing sign boards made out of 2mm aluminum sheet / 4mm ACP (Aluminum composite Panel); size 75 cm Octagon as per design of IRC-67-2022. Pre-treated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint; reflectorized with Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 3.6 mtr long stand post of 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:1:2 CC block of size 45 x 45 x 60 Cms. for each leg. Including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

- **Add 2 nos. of L 32\*32 Angle Section holdfast size min 300mm length fixed perpendicular to each other and both end shall cut 50mm & cross bended 45 Degree. Barcode with Description (as per IRC 67-2022) shall be fixed in each signboard which can be scanable & changes should be done as per instruction of engineer incharge. No extra charge given for that.**

The various materials and fabrication of road signs shall conform to the following requirements.

**1. Concrete**

Concrete shall be of M25 grade

**2 Reinforcing Steel**

Reinforcing steel shall conform to the requirements of IS 1786 unless otherwise specified.

**3 Bolts, Nuts and Washers**

High strength bolts shall conform to IS 1367 whereas precision bolts, nuts, etc. shall conform to IS 1364.

**4 Plates and Supports**

Plates and support sections for the signposts shall conform to IS 226 and IS 2062 or any other stated IS specification.

**5 Substrate**

The substrate shall be either Aluminum sheeting or Aluminium Composite Material(ACM) conforming to following subsections.

## 6 Aluminium

Aluminium sheets used for sign boards shall be of smooth, hard and corrosion resistant aluminium alloy conforming to IS 736 - Material Designation 24345 or 1900.

## 7 Aluminium Composite Materials (ACM)

ACM sheets used for sign boards is a sandwiched construction with a thermoplastic core of „Low Density Polyethylene" (LDPE) between two thick skins/sheets of Aluminium with overall thickness of 4 mm and 3 mm, and Aluminium skin thickness of 0.4 - 0.5 mm and 0.25 - 0.3 mm respectively on both sides. The retro reflective sheeting must be applied on the top surface with aluminum surface with recommended surface preparation from sheeting manufacturer. A fluorocarbon coating may be applied over the exposed surface of aluminium to ensure corrosion resistant and weatherability and shall conform to relevant ASTM. The mechanical properties of 4mm and 3mm ACM and that of its Aluminum skin shall conform to the requirement given in Table, when tested in accordance with the test methods mentioned against each of them.

Table Specifications for Aluminum Composite Material (ACM)

S.N	Description	Specification for 4mm		Specification for 3mm
		Standard test	Acceptable value	Acceptable value
A	<b>Mechanical Properties of ACM</b>			
1	Peel off strength with retro reflective sheeting. (Drum Peel Test)	ASTM D903	Min. 4 N/mm	Min. 4 N/mm
2	Tensile strength	ASTME638	Min. 40 N/mm <sup>2</sup>	Min. 30 N/mm <sup>2</sup>
3	0.2% Proof Stress	ASTME638	Min. 34 N/mm <sup>2</sup>	Min. 34 N/mm <sup>2</sup>
4	Elongation	ASTME638	Min. 6 %	Min. 5 %
5	Flexural strength	ASTM C393	Min. 130 N/mm <sup>2</sup>	Min. 120 N/mm <sup>2</sup>
6	Shear strength with Punch shear test	ASTM D732	Min. 18 N/mm <sup>2</sup>	Min. 18 N/mm <sup>2</sup>
B	<b>Properties of Aluminum Skin</b>			
1	Tensile strength (Rm)	ASTM E8	Min. 150 N/mm <sup>2</sup>	Min. 130 N/mm <sup>2</sup>
2	Modulus of elasticity	ASTM E8	Min. 70,000 N/mm <sup>2</sup>	Min. 70,000 N/mm <sup>2</sup>
3	Elongation	ASTM E8	A <sub>50</sub> Min. 2%	A <sub>50</sub> Min. 2%
4	0.2% Proof Stress	ASTM E8	Min. 110 N/mm <sup>2</sup>	Min. 110 N/mm <sup>2</sup>

## 8 Plate Thickness

Shoulder mounted ground signs with a maximum side dimension not exceeding 600 mm shall not be less than 1.5 mm thick with Aluminium and 3 mm thick with Aluminium Composite Material. All other signs shall be at least 2 mm thick with Aluminium and 4 mm thick with Aluminium Composite Material. The thickness of the sheet shall be related to the size of the sign and its support and shall be such that it does not bend or deform under prevailing wind and other loads. All overhead signs made with Aluminium Composite Material shall be minimum 4 mm thick to withstand wind and other loads without deformation.

## 9 Retro Reflective Sheeting

The retro reflective sheeting used on the signs shall consist of white or coloured sheeting having a smooth outer surface which has the property of retro reflection over its entire surface. It shall be weather resistant and exhibit colour fastness. It shall be new and unused and show no evidence of cracking, scaling, and pitting, blistering, edge lifting or curling and shall have negligible shrinkage or expansion. A certificate of having the sheeting tested for coefficient of retro reflection, daytime colour and luminance, shrinkage, flexibility, liner removal, adhesion, impact resistance, specular gloss and fungus resistance, 3 years outdoor weathering and its having passed these tests shall be obtained from International/Government Laboratory/Institute by the manufacturer of the sheeting and in case the certificate is obtained from international agency, it should also be obtained from Indian agency within 3 years of launching of product by the manufacturer including actual outdoor weathering in Indian conditions. Alternatively, a certificate conforming to ASTM Specification (D 4956-09) on artificial accelerated weathering requirements from a reputed laboratory in India can be accepted provisionally. In such a situation, the Municipal Commissioner, AMC/Client, if so desires, could seek for a performance guarantee which would be released after receipt of certificate meeting the requirement of three years outdoor weathering of the sheeting .

## 10 Description of sheet:

### *Type XI Micro prismatic grade sheeting*

Retro-reflective sheeting typically manufactured as a cube corner. The reflective sheeting shall be retro-reflective sheeting made of micro prismatic retro-reflective material. The retro-reflective surface, after cleaning with soap and water and in dry condition shall have the minimum co-efficient of retro-reflection (determined in accordance with ASTM D 4956-09) as indicated in **Table**

When totally wet, the sheeting shall show not less than 90 percent of the values, of retro-reflection indicated in above Table. At the end of 10 years, the sheeting shall retain at least 80 percent of its original retro-reflectance.

**Table Acceptable Minimum Coefficient of Retro-reflection for Type XI Prismatic Grade Sheeting<sup>A</sup> (Candelas per Lux per Square Metre)**

Observation Angle	Entrance Angle	White	Yellow	Orange	Green	Red	Blue	Brown	Florescent yellow-Green	Florescent yellow	Florescent Orange
0.1 <sup>0B</sup>	-4°	830	620	290	83	125	37	25	660	500	250
0.1 <sup>0B</sup>	+30°	325	245	115	33	50	15	10	260	200	100
0.2°	-4°	580	435	200	58	87	26	17	460	350	175
0.2°	+30°	220	165	77	22	33	10	7	180	130	66
0.5°	-4°	420	315	150	42	63	19	13	340	250	125
0.5°	+30°	150	110	53	15	23	7	5	120	90	45
1.0°	-4°	120	90	42	12	18	5	4	96	72	36
1.0°	+30°	45	34	16	5	7	2	1	36	27	14

A Minimum Co-efficient of Retro-reflection ( $R_d$ ) (cd.lx<sup>-1</sup>.m<sup>-2</sup>).

B Values for 0.1° observation angles are supplementary requirements that shall apply only when specified by the purchaser in the contract or order.

## **11 Adhesives**

The sheeting shall have a pressure-sensitive adhesive of the aggressive-tack type requiring no heat, solvent or other preparation for adhesion to a smooth clean surface, in a manner recommended by the sheeting manufacturer. The adhesive shall be protected by an easily removable liner (removable by peeling without soaking in water or other solvent) and shall be suitable for the type of material of the base plate used for the sign. The adhesive shall form a durable bond to smooth, corrosion and weather resistant surface of the base plate such that it shall not be possible to remove the sheeting from the sign base in one piece by use of sharp instrument. The sheeting shall be applied in accordance with the manufacturers specifications.

## **12. Fabrication**

Surface to be reflectorised shall be effectively prepared to receive the retro-reflective sheeting. The aluminium sheeting shall be de-greased either by acid or hot alkaline etching and all scale/dust removed to obtain a smooth plain surface before the application of retro-reflective sheeting. If the surface is rough, approved surface primer may be used. After cleaning, metal shall not be handled, except by suitable device or clean canvas gloves, between all cleaning and preparation operation and application of reflective sheeting/primer. There shall be no opportunity for metal to come in contact with grease, oil or other contaminants prior to the application of retro-reflective sheeting. Complete sheets of the material shall be used on the signs except where it is unavoidable. At splices, sheeting with pressure-sensitive adhesives shall be overlapped not less than 5 mm.

Where screen printing with transparent colours is proposed, only butt joint shall be used. The material shall cover the sign surface evenly and shall be free from twists, cracks and folds. Cut-outs to produce legends and borders shall be bonded with the sheeting in the manner specified by the manufacturer.

## **13. Messages/Borders**

The messages (legends, letters, numerals, etc.) and borders shall either be screen-printed or of cut out from durable transparent overlay or cut-out from the same type of reflective sheeting for the cautionary and mandatory sign boards. Screen printing shall be processed and finished with materials and in a manner specified by the sheeting manufacturer. For the informative and other sign boards, the messages (legends, letters, numerals etc.) and borders shall be cut-out from durable transparent overlay film or cut-out from the same reflective sheeting only. Cut-outs shall be from durable transparent overlay materials as specified by the sheeting manufacturer and shall be bonded with the sheeting in the manner specified by the manufacturer. Whenever transparent overlay film is used for making any type of sign, the coloured portion of sign shall have coefficient of reflectivity not less than the reflectivity of type and colour of sheeting normally used, as per table. Cut-out messages and borders, wherever used, shall be either made out of retro-reflective sheeting or made out of durable transparent overlay except those in black which shall be of non-reflective sheeting or opaque in case of durable transparent overlay. Creating coloured areas by means of screen-printing with ink shall not be permitted.

### **Special Note:**

(1) Contractor Shall have to Submit the manufacture test certificate of retro reflective sheet before Starting the work at no Extra cost

(2) Contractor Shall have to Submit the test report of retro reflective sheet from Govt. approved Laboratory testing of sheeting at no extra cost before producing First R.A bill and then after on end when asked by AMC. The contractor shall not be paid extra for same.

(3) Contractor shall have to submit the filled form as mentioned below in Soft (Signed & Scanned) and two hard copies

### **Measurements for Payment**

The measurement of standard directional board signs shall be in numbers of different types of signs supplied.

**Rate**

The Contract unit rate shall be payment in full for the cost of making the road sign, including all materials, installing it at the site and incidentals to complete the work in accordance with the Specifications.

**ITEM NO. 13 Arrow type sign boards** :Providing and fixing Arrow type sign boards made out of 4mm ACP (Aluminum composite Panel); size 120 cm x 45 cm (2 Nos) Triangular plate made out of Retro Reflective sheeting of Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications fixed over ACP sheet supported with Back Support Square of 25x25x2 mm MS angle painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge, firmly fixed 3.6 mtr long stand post of 75 x 75 x 6mm / 65NB Circular SS Pipe as require to ground by means of properly designed foundation with M20 grade of cement concrete 45 cm x45 cm x 60 cm, for each leg with (2 nos) 300mm long holdfasts welded with pole in opposite directions of angle section size 32 x 32x 2 mm Including excavation, curing etc. Complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor (A) Class-C Type-11 Retro Reflective sheeting.(As per RA)

**ITEM NO. 14 SS dual Sided Landmark / Tourist Information Signboard** : Providing and fixing Dual sided landmark name/ signboard of size 1800x1220 mm made out of Retro Reflective Sheeting of micro Prismatic grade conforming to IRC 67: 2022 & Type X standards of ASTM D4956-09 specifications ,fixed over 4 mm ACP sheets supported with back Support square pipe of 25x25x2 mm stainless steel angle of 304 grade, supported on a stainless steel pipe of 76.2 OD, 2.11 mm tick of 304 grade & surrounded by SS pipe of 38.10 mm OD, 1.2 mm tick of SS 304 Grade ,firmly fixed to the ground by means of properly designed foundation with M20 grade cement concrete 45cm x45cm x60cm, 60 cm below ground level as per approved drawing. The message (Legebd, Letter, Numericals,etc. ) and borders shall either be screen printed or of cut out from durable Transparent overlay film or cut from same type of sheeting as per Type -XI standards. Specifications : as per IRC 67 -2022 ,10 Year warranty for retro reflective sheeting from the original sheeting manufacture & a certificate copy of three years outdoor exposure report from an independent test lab for the product offered shall be submitted by the contractor. ( Bottom of the board shall be 900 mm above ground level ) specifications : IRC 67: 2022 . There shall be stamp behind the ACP sheet carrying the name of the supplier name of sheeting manufacturer , Type of Retro reflective sheeting , Installation month & year as per clause 12.2 of IRC 67-2022 (As per approved RA by Traffic Department)

**ITEM NO. 15 Sign board per Square Meter** : -Providing and fixing sign boards made out of 2mm aluminum sheet / 4mm ACP (Aluminum composite Panel); size 1 meter x 1 meter as per design of IRC- 67-2022. Pretreated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorized with Micro Prismatic Grade retroreflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 1 Nos. long stand post clear height min 2.1m of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 50 x 50 x 5mm; painted with best quality epoxy coatings in black and white bends. the details of symbol or inscription / numerals for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 Cms. for each leg with (2 nos) 300mm long holdfasts welded with pole in opposite directions of angle section size 32 x 32x 2 mm. Including excavation, curing etc. complete under the supervision of engineer in charge. A



warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting (SOR AHMEDABAD 2023-24 Item code 26103C)  
(Item derived in Sqmt, from size of 1.0x1.0m Each no.)

**ITEM NO. 16 Direction (Junction) Sign:** - Providing and fixing sign boards made out of 2mm aluminum sheet / 4mm ACP (Aluminum composite Panel); size 244x122 cm rectangular as per design of IRC-67-2022. Pre-treated with phosphate process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint; reflectorized with Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D- 4956 and latest M.O.S.T. Specifications; 4.0 mtr long (2 Nos.) stand post of 75 x 75 x 6 mm / 65NB Circular MS Pipe as required and frame fabricated in grid form of min.0.3 sqmt from suitable size iron angle of 50 x 50 x 5mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 Cm for each leg with (2 nos) 300mm long holdfasts welded with pole in opposite directions of angle section size 32 x 32x 2 mm. Including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting(SOR AHMEDABAD 2023-24 Item code 26098C)

- Add 2 nos. of L 32\*32 Angle Section holdfast size min 300mm length fixed perpendicular to each other and both end shall cut 50mm & cross bended 45 Degree. Barcode with Description (as per IRC 67-2022) shall be fixed in each signboard which can be scanable & changes should be done as per instruction of engineer incharge. No extra charge given for that.

## **ITEM NO. 17 RETRO –REFLECTORISEED TRAFFIC SIGN**

### **Mandatory Signage**

Regulatory / Mandatory Sign: - Providing and fixing sign boards made out of 2mm aluminum sheet / 4mm ACP (Aluminum composite Panel); size 60 cm Dia Circle plus 60 cm x 20cm rectangular additional plate as per design of IRC67-2022. Pre-treated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint; reflectorized with Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 3.6mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:1:2 CC block of size 45 x 45 x 60 Cms. for each leg. Including excavation, curing etc. Complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

- Add 2 nos. of L 32\*32 Angle Section holdfast size min 300mm length fixed perpendicular to each other and both end shall cut 50mm & cross bended 45 Degree. BEmpanelmentode with Description (as per IRC 67-2022) shall be fixed in each signboard which can be scanable & changes should be done as per instruction of engineer incharge. No extra charge given for that.

## **ITEM NO.18 RETRO –REFLECTORISEED TRAFFIC SIGN**

### **Cautionary signage**

Cautionary Warning Sign: - Providing and fixing sign boards made out of 2mm aluminum sheet / 4mm ACP (Aluminum composite Panel); size 60 x 60 x 60 cm equilateral triangle plus 60 cm x 20cm rectangular additional plate as per design of IRC-67-2022. Pretreated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint; reflectorized with Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 3.6mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:1:2 CC block of size 45 x 45 x 60 Cm for each leg. Including excavation, curing etc. Complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A)Class-C Type-11 Retro Reflective sheeting.

- **Add 2 nos. of L 32\*32 Angle Section holdfast size min 300mm length fixed perpendicular to each other and both end shall cut 50mm & cross bended 45 Degree. BEmpanelmentode with Description (as per IRC 67-2022) shall be fixed in each signboard which can be scanable & changes should be done as per instruction of engineer incharge. No extra charge given for that.**

## **ITEM NO.19 RETRO–REFLECTORISEED TRAFFIC SIGN**

### **Informatory signage**

Facility Informatory Sign: - Providing and fixing sign boards made out of 2mm aluminum sheet / 4mm ACP (Aluminum composite Panel); size 60 x 45 cm rectangular plus 60 cm x 20cm rectangular additional plate as per design of IRC-67-2022. Pre-treated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint; reflectorized with Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 3.6mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:1:2 CC block of size 45 x 45 x 60 Cms. for each leg. Including excavation, curing etc. Complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

- **Add 2 nos. of L 32\*32 Angle Section holdfast size min 300mm length fixed perpendicular to each other and both end shall cut 50mm & cross bended 45 Degree. BEmpanelmentode with Description (as per IRC 67-2022) shall be fixed in each signboard which can be scanable & changes should be done as per instruction of engineer incharge. No extra charge given for that.**

The various materials and fabrication of road signs shall conform to the following requirements.

### **2. Concrete**

Concrete shall be of M25 grade

### **2 Reinforcing Steel**

Reinforcing steel shall conform to the requirements of IS 1786 unless otherwise specified.

### **3 Bolts, Nuts and Washers**

High strength bolts shall conform to IS 1367 whereas precision bolts, nuts, etc. shall conform to IS 1364.

#### 4 Plates and Supports

Plates and support sections for the signposts shall conform to IS 226 and IS 2062 or any other stated IS specification.

#### 5 Substrate

The substrate shall be either Aluminum sheeting or Aluminium Composite Material(ACM) conforming to following subsections.

#### 6 Aluminium

Aluminium sheets used for sign boards shall be of smooth, hard and corrosion resistant aluminium alloy conforming to IS 736 - Material Designation 24345 or 1900.

#### 7 Aluminium Composite Materials (ACM)

ACM sheets used for sign boards is a sandwiched construction with a thermoplastic core of „Low Density Polyethylene" (LDPE) between two thick skins/sheets of Aluminium with overall thickness of 4 mm and 3 mm, and Aluminium skin thickness of 0.4 - 0.5 mm and 0.25 - 0.3 mm respectively on both sides. The retro reflective sheeting must be applied on the top surface with aluminum surface with recommended surface preparation from sheeting manufacturer. A fluorocarbon coating may be applied over the exposed surface of aluminium to ensure corrosion resistant and weatherability and shall conform to relevant ASTM. The mechanical properties of 4mm and 3mm ACM and that of its Aluminum skin shall conform to the requirement given in Table, when tested in accordance with the test methods mentioned against each of them.

**Table Specifications for Aluminum Composite Material (ACM)**

S.N	Description	Specification for 4mm		Specification for 3mm
		Standard test	Acceptable value	Acceptable value
A	<b>Mechanical Properties of ACM</b>			
1	Peel off strength with retro reflective sheeting. (Drum Peel Test)	ASTM D903	Min. 4 N/mm	Min. 4 N/mm
2	Tensile strength	ASTME638	Min. 40 N/mm <sup>2</sup>	Min. 30 N/mm <sup>2</sup>
3	0.2% Proof Stress	ASTME638	Min. 34 N/mm <sup>2</sup>	Min. 34 N/mm <sup>2</sup>
4	Elongation	ASTME638	Min. 6 %	Min. 5 %
5	Flexural strength	ASTM C393	Min. 130 N/mm <sup>2</sup>	Min. 120 N/mm <sup>2</sup>
6	Shear strength with Punch shear test	ASTM D732	Min. 18 N/mm <sup>2</sup>	Min. 18 N/mm <sup>2</sup>
B	<b>Properties of Aluminum Skin</b>			
1	Tensile strength (Rm)	ASTM E8	Min. 150 N/mm <sup>2</sup>	Min. 130 N/mm <sup>2</sup>
2	Modulus of elasticity	ASTM E8	Min. 70,000 N/mm <sup>2</sup>	Min. 70,000 N/mm <sup>2</sup>
3	Elongation	ASTM E8	A <sub>50</sub> Min. 2%	A <sub>50</sub> Min. 2%
4	0.2% Proof Stress	ASTM E8	Min. 110 N/mm <sup>2</sup>	Min. 110 N/mm <sup>2</sup>

#### 8 Plate Thickness

Shoulder mounted ground signs with a maximum side dimension not exceeding 600 mm shall not be less than 1.5 mm thick with Aluminium and 3 mm thick with Aluminium Composite Material. All other signs shall be at least 2 mm thick with Aluminium and 4 mm thick with Aluminium Composite Material. The thickness of the sheet shall be related to the size of the sign and its support and shall be such that it does not bend or deform under prevailing wind and other loads. All overhead signs made with Aluminium Composite Material shall be minimum 4 mm thick to withstand wind and other loads without deformation.

## 9 Retro Reflective Sheeting

The retro reflective sheeting used on the signs shall consist of white or coloured sheeting having a smooth outer surface which has the property of retro reflection over its entire surface. It shall be weather resistant and exhibit colour fastness. It shall be new and unused and show no evidence of cracking, scaling, and pitting, blistering, edge lifting or curling and shall have negligible shrinkage or expansion. A certificate of having the sheeting tested for coefficient of retro reflection, daytime colour and luminance, shrinkage, flexibility, liner removal, adhesion, impact resistance, specular gloss and fungus resistance, 3 years outdoor weathering and its having passed these tests shall be obtained from International/Government Laboratory/Institute by the manufacturer of the sheeting and in case the certificate is obtained from international agency, it should also be obtained from Indian agency within 3 years of launching of product by the manufacturer including actual outdoor weathering in Indian conditions. Alternatively, a certificate conforming to ASTM Specification (D 4956-09) on artificial accelerated weathering requirements from a reputed laboratory in India can be accepted provisionally. In such a situation, the Municipal Commissioner, AMC/Client, if so desires, could seek for a performance guarantee which would be released after receipt of certificate meeting the requirement of three years outdoor weathering of the sheeting .

## 10 Description of sheet:

### *Type XI Micro prismatic grade sheeting*

Retro-reflective sheeting typically manufactured as a cube corner. The reflective sheeting shall be retro-reflective sheeting made of micro prismatic retro-reflective material. The retro-reflective surface, after cleaning with soap and water and in dry condition shall have the minimum co-efficient of retro-reflection (determined in accordance with ASTM D 4956-09) as indicated in **Table**

When totally wet, the sheeting shall show not less than 90 percent of the values, of retro-reflection indicated in above Table. At the end of 10 years, the sheeting shall retain at least 80 percent of its original retro-reflectance.

**Table Acceptable Minimum Coefficient of Retro-reflection for Type XI Prismatic Grade Sheeting<sup>A</sup> (Candelas per Lux per Square Metre)**

Observation Angle	Entrance Angle	White	Yellow	Orange	Green	Red	Blue	Brown	Florescent yellow-Green	Florescent yellow	Florescent Orange
0.1 <sup>OB</sup>	-4°	830	620	290	83	125	37	25	660	500	250
0.1 <sup>OB</sup>	+30°	325	245	115	33	50	15	10	260	200	100
0.2°	-4°	580	435	200	58	87	26	17	460	350	175
0.2°	+30°	220	165	77	22	33	10	7	180	130	66
0.5°	-4°	420	315	150	42	63	19	13	340	250	125
0.5°	+30°	150	110	53	15	23	7	5	120	90	45
1.0°	-4°	120	90	42	12	18	5	4	96	72	36

1.0°	+30°	45	34	16	5	7	2	1	36	27	14
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A Minimum Co-efficient of Retro-reflection ( $R_A$ ) ( $\text{cd.lx}^{-1} \cdot \text{m}^{-2}$ ).

B Values for 0.1° observation angles are supplementary requirements that shall apply only when specified by the purchaser in the contract or order.

## 11 Adhesives

The sheeting shall have a pressure-sensitive adhesive of the aggressive-tack type requiring no heat, solvent or other preparation for adhesion to a smooth clean surface, in a manner recommended by the sheeting manufacturer. The adhesive shall be protected by an easily removable liner (removable by peeling without soaking in water or other solvent) and shall be suitable for the type of material of the base plate used for the sign. The adhesive shall form a durable bond to smooth, corrosion and weather resistant surface of the base plate such that it shall not be possible to remove the sheeting from the sign base in one piece by use of sharp instrument. The sheeting shall be applied in accordance with the manufacturers specifications.

## 12. Fabrication

Surface to be reflectorised shall be effectively prepared to receive the retro-reflective sheeting. The aluminium sheeting shall be de-greased either by acid or hot alkaline etching and all scale/dust removed to obtain a smooth plain surface before the application of retro-reflective sheeting. If the surface is rough, approved surface primer may be used. After cleaning, metal shall not be handled, except by suitable device or clean canvas gloves, between all cleaning and preparation operation and application of reflective sheeting/primer. There shall be no opportunity for metal to come in contact with grease, oil or other contaminants prior to the application of retro-reflective sheeting. Complete sheets of the material shall be used on the signs except where it is unavoidable. At splices, sheeting with pressure-sensitive adhesives shall be overlapped not less than 5 mm.

Where screen printing with transparent colours is proposed, only butt joint shall be used. The material shall cover the sign surface evenly and shall be free from twists, cracks and folds. Cut-outs to produce legends and borders shall be bonded with the sheeting in the manner specified by the manufacturer.

## 13. Messages/Borders

The messages (legends, letters, numerals, etc.) and borders shall either be screen-printed or of cut out from durable transparent overlay or cut-out from the same type of reflective sheeting for the cautionary and mandatory sign boards. Screen printing shall be processed and finished with materials and in a manner specified by the sheeting manufacturer. For the informatory and other sign boards, the messages (legends, letters, numerals etc.) and borders shall be cut-out from durable transparent overlay film or cut-out from the same reflective sheeting only. Cut-outs shall be from durable transparent overlay materials as specified by the sheeting manufacturer and shall be bonded with the sheeting in the manner specified by the manufacturer. Whenever transparent overlay film is used for making any type of sign, the coloured portion of sign shall have coefficient of reflectivity not less than the reflectivity of type and colour of sheeting normally used, as per table. Cut-out messages and borders, wherever used, shall be either made out of retro-reflective sheeting or made out of durable transparent overlay except those in black which shall be of non-reflective sheeting or opaque in case of durable transparent overlay. Creating coloured areas by means of screen-printing with ink shall not be permitted.

### Special Note:

(1) Contractor Shall have to Submit the manufacture test certificate of retro reflective sheet before Starting the work at no Extra cost

(2) Contractor Shall have to Submit the test report of retro reflective sheet from Govt. approved Laboratory testing of sheeting at no extra cost before producing First R.A bill and then after on end when asked by AMC. The contractor shall not be paid extra for same.

(3) Contractor shall have to submit the filled form as mentioned below in Soft (Signed & Scanned) and two hard copies

**Measurements for Payment**

The measurement of standard directional board signs shall be in numbers of different types of signs supplied.

**Rate**

The Contract unit rate shall be payment in full for the cost of making the road sign, including all materials, installing it at the site and incidentals to complete the work in accordance with the Specifications.

**USAGE CONFORMANCE CERTIFICATE**

**CLIENT NAME** \_\_\_\_\_

**CONVERTER NAME** \_\_\_\_\_

**CONTRACTOR NAME** \_\_\_\_\_

**WORK ORDER DETAILS** \_\_\_\_\_

Details of the sign board fixing work is carried out using Name of Manufacturer

Sr no.	Type of work with location	size	Qty	Remarks

Certified that the **sign board** fixing work have been manufactured using Brand Name of **Reflective sheets** (According to ASTM D- 4280) and are covered by

the Warranty No.....Dated.....

which will be expired on dated.....

Name of sign board Manufacturer

Name of Converter

Authorized Signatory

Authorized Signatory

***Special Note: Contractor may submit a certificate of being authorized converter of approved manufacturers***

### USAGE CONFORMANCE CERTIFICATE

CLIENT NAME \_\_\_\_\_

CONVERTER NAME \_\_\_\_\_

CONTRACTOR NAME \_\_\_\_\_

WORK ORDER DETAILS \_\_\_\_\_

Details of the sign board fixing work is carried out using Name of Manufacturer

Sr no.	Type of work with location	size	Qty	Remarks

Certified that the **sign board** fixing work have been manufactured using Brand Name of **Reflective sheets** (According to ASTM D- 4280) and are covered by

the Warranty No.....Dated.....

which will be expired on dated.....

Name of sign board Manufacturer

Name of Converter

Authorized Signatory

Authorized Signatory

*Special Note: Contractor may submit a certificate of being authorized converter of approved manufacturers*

## ITEM No.20 CAT EYE/Road Stud/RPM:

Supplying of Moulded Twin Shank Raised Pavement Markers made of polycarbonates and ABS moulded body and reflective panels with Micro Prismatic Lens (No Glass Bed Lens) capable of Providing total internal reflection of the light entering the lens face and shall support a load of 13635 kgs. tested accordance to ASTM D 4280 Type H and complying to specification of category A of MORTH Circular NO RW/NH/33023/10-97-DO III Dt.11.06.1997. The height, width and length shall not exceed 20 mm,130 mm and 130mm and with minimum reflective area of 13 sqcm on each side and slope to the base shall be 35+/-5 degree.The strength of detachment of integrated cylindrical shank,(of diameter not less than 19+/-2 mm and height not less than 30+/-2 mm) from the body is to be a minimum value of 500 kgf. Fixing will be by drilling holes on the road for the shank to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and The color of the marker should be as per the IRC 35-2015 and as directed by Engineer-In-charge.(R&B SOR 2023-24 Item code:26162A)

### Detailed Technical Specifications for Moulded Twin Shanks Cat Eye / Road Stud / RPM

#### Material & Manufacturing

##### 1. Scope

The work shall cover the providing and fixing of Raised Pavement marker (RPM) or road stud, a device which is bonded to or anchored within the road surface, for lane marking and delineation for night-time visibility, as specified in the contract.

##### 2. Material

2.1 Plastic body of RPM road stud shall be molded from ASA ( Acylicstyreneactylonitrile ) of HIPS ( Impacts polystyrene) or ABS or any other suitable material approved by the Engineer in charge. The marker shall support a load of 13635 kg. tested in accordance with ASTM D 4280

2.2 Reflective panels shall consist if number or lenses containing single or dual prismatic cubes capable of providing total internal reflection the light entering the lens face lenses shall be molded of methyl methecrylat conforming to ASTM D 788 or equivalent.

##### 3. Design

The slope or retro reflecting surface shall prfeably be 35. + 5degree to base. The area of each retro reflecting surface shall not be less then 13.0 sqmt.

##### 4. Optical performance

4.1 Unidirectional and bi directional studs each reflector or combination of reflector on each face of the stud shall have a CIL not less the given in Table 1 or 2 appropriate.

##### 4.2 Omni directional studs

Each omni directional stud shall have a min. CIL of not less than 2mcd/lx

**Table 1 min. CIL vales for category 'A' studs.**

Entrance Angle	Observation Angle	C.I.L. in mcd/lx		
		White	Amber	Red
0° U 5° L&R	0.3°	220	110	44
0° U 10° L&R	0.5°	120	60	24



**Table 2 min. CIL vales for category 'B' studs.**

<i>Entrance Angle</i>	<i>Observation Angle</i>	<i>C.I.L. in mcd/lx</i>		
		<i>White</i>	<i>Amber</i>	<i>Red</i>
0° U 6° L&R	0.3°	20	10	4
0° U 10° L&R	0.5°	15	7.5	3

Note:

- 1) The entrance angle of 0° U corresponds to the normal aspect of the reflectors when the reflecting road stud is installed in horizontal road surface.
- 2) The stud incorporating one or more corner cube reflectors shall be included in category 'A', the stud incorporating one or more bi-convex reflectors shall be included in category 'B'.

## **5. Tests**

**5.1** Coefficient of luminance intensity can be measured by produce described in ASTM 809 "Practice for Measuring Photometric characteristics" or as recommended in BS 879 part 4:1973

**5.2** under test conditions, a stud shall not be considered to fail the photometric requirements if the measured C.I.L at any one position of measurements is less than the values specified in Table 1 or 2 provided that

- i) the value is not less than 80 percent of the specified minimum and
- ii) the average of the left and right measurements for the specific angle is greater than the specified minimum

## **6. Fixing of Reflective studs**

### **6.1 Requirements**

The enveloping profile of the head of the stud shall be smooth and the studs shall not present any sharp edges to traffic. The reflecting portion of the studs shall be free from crevices or ledges where dirt might accumulate. Marker height shall not be less than 10mm and shall not exceed 20 mm. and it's width should not exceed 130mm. the base of the marker shall be flat within 1.3mm. if the bottom of the marker is configured, the outer most faces of the configurations shall not deviate more than 1.3mm from the flat surface. The marker shall be fitted with two polymer shanks at appropriate places at either ends and shall be slotted along its length. The Shank Length for Each of the shanks shall not be less than 20 millimeter.

All road studs shall be legibly marked with name, trade mark or other means of identifications of the manufacturer.

### **6.2 Placement**

The reflective marker shall be fixed to the road surface using the adhesives and the procedure recommended by the manufacturer. No nails should be used to fix the marker so that they do not pose safety hazard on the roads. Regardless of the type of adhesive used ,the markers shall not fixed if the pavement is not surface dry and on new asphalt concrete surface until the surface has been opened to traffic for period of not less than 14 hours. The portions of the Road surface to which marker is to be bonded by the adhesive shall be free of dirt, curing compound, grease, oil, moisture, loose or and any other material which would adversely affect the bond of the adhesive.

The adhesive shall be placed uniformly on the Cleaned pavement surface or on the bottom of the markers in a quantity. sufficient to result in complete coverage of the area of the contact of the better surface with no voids present at a slight excess after the better surface has been lightly pressed in place. For epoxy installations, excess adhesive around

the edge of the marker, excess Adhesive on the pavement and adhesive on the exposed surfaces of the markers shall be immediately removed.

### 6.3 Warranty and Durability

The contractor shall obtain from the manufacturer a two year warranty for contractor held performance including stipulated retro reflectance of the reflecting panel and submit the same to the Engineer in charge. In addition a two year warranty for satisfactory infield performance of the finished road marker shall also be given by the contractor who carried out the work of fixing of reflective road markers. In case the markers are displaced, damaged, get worn out or low their reflectivity compared to stipulated standards, the contractor would be required to replace all such marker within 15 days of the intimation from the Engineer at his own cost.

### 7. Measurement of Payment

The measurement of reflective road markers shall be in number of diff. types of marker supplied and fixed.

### 8. Rate

The contract unit rate for reflective road marker shall be payment in full compensation for furnishing all labor, materials, tools, equipment including incidental costs necessary for carrying out the work at site conforming to the specifications complete as per approved drawings or as directed by the Engineer

### USAGE CONFORMANCE CERTIFICATE

CLIENT NAME \_\_\_\_\_

CONVERTER NAME \_\_\_\_\_

CONTRACTOR NAME \_\_\_\_\_

WORK ORDER DETAILS \_\_\_\_\_

Details of the Cat-Eye fixing work is carried out using Name of Manufacturer

Sr no.	Type of work with location	size	Qty	Remarks

Certified that the Cat-Eye fixing work have been manufactured using Brand Name of **Reflective pavement marker (RPM)** (According to ASTM D- 4280) and are covered by

the Warranty No.....Dated.....

which will be expired on dated.....

Name of Cat -Eye Manufacturer

Name of Converter

Authorized Signatory

Authorized Signatory

***Special Note: Contractor may submit a certificate of being authorized converter of approved manufacturers***

## ITEM NO. 21 FEXIBLE MEDIAN MARKER:

**Flexible Median Marker :** Providing and Fixing of Flexible Median Marker that are made of tough, high impact resistant, injection-molded, thermoplastic body with property of flexibility to provide high durability. The dimension of Flexible Median Marker should not exceed 18.4 cm in height(including shank height),12.5 Cm in width. ,0.65 cm in thickness and shank depth shall be 3.4 cm The body structure shall be rounded at all its corners and edges. The plastic used for molding the Flexible Median Marker should survive impact load of 5kg continuously for 750 times at room temperature. The logo of the manufacturer shall be embossed on either side of the body in the injection molding process. The Median Marker shall have flame like shaped body with, fluorescent yellow color retro-reflective sheeting of size not less than 90 Cm square, with fully reflective micro prismatic cube corners as its retro-reflective elements as per IRC 67 2012 and ASTM D4956-09 type XI specifications reflectivity values. The retroreflective sheeting shall be one or both sides of the Flexible Median Marker and shall be edge protected with no exposed edges which will prevent edge lifting, vandalism, sheeting damage, etc. The Flexible Median Marker shall be fixed by a combination of epoxy adhesive and grouting as recommended by manufacturer and Engineer in charge.

### 1. Description:

Flexible Median Marker is made from a combination of tough, high impact resistant engineering thermoplastic material with U shape structure having rebound/bounce-back property. The fluorescent yellow reflective sheeting in the FMM helps to highlight the medians and increase the visibility during the night.

The product should have edge sealed Reflective sheeting for vandal proof from pilling off the sheeting for longer durability and service life.

A. **Color:**The marker body shall be produced in neutral Black color. The color of the retro-reflective element shall be Florescent Yellow.

B.

C. **Material:**

The plastic body of the Flexible Median Marker shall be moulded from Flexible Thermoplastic Body.

D. **Dimensions:**

Height: The marker height shall be min 145 mm

Width: The marker width shall be min. 120 mm

Body Thickness: min 6.5mm

Shank Length: Each of the shanks shall not be less than 20 millimeter and depth shall not be less than 30mm.

### 2. RETROREFLECTIVE SHEETING

The Median Marker shall have rectangular shaped fluorescent yellow colored retro-reflective sheeting, conforming to ASTM D4956 -09 type XI specifications, on its surfaces.

The retro-reflective sheeting shall be on both sides of the Flexible Median Marker and shall be edge protected with no exposed edges which will prevent edge lifting, vandalism, sheeting damage, etc. The edge of sheeting should not come out easily by putting nails, sharp objects etc. The logo of the manufacturer shall be embossed on either side of the body.

The retro-reflective sheeting shall be made of retro-reflective elements that are optically stable, non-metallized, fully retro-reflective, micro-prismatic cube-corners.

**3. Color (daytime)**

The retro-reflective sheeting used in the Median Marker shall be of fluorescent yellow color.

The chromaticity coordinates (x,y) of the retro-reflective sheeting shall conform to Table II

TABLE II: Color Specification Limits<sup>1</sup> (Daytime)

Color	1		2		3		4	
	X	y	X	Y	X	y	X	Y
Fluorescent Yellow	0.479	0.520	0.446	0.483	0.512	0.421	0.557	0.442

**4.) Fluorescence**

The minimum total daytime luminance for the fluorescent yellow colored retro-reflective sheeting, measured in terms of luminance factor( $Y_T$  %), shall be as per the below Table III.

Table III: Daytime Luminance

Color	Luminance Factor ( $Y_T$ %)
Fluorescent Yellow	45%

Conformance to standard chromaticity (x, y) and luminance factor (Y %) requirements shall be determined by instrumental method in accordance with ASTM E 991.

**5.) Coefficients of Retro-reflection (Ra)**

**Retro Reflective Sheeting**

The retro reflective sheeting used on the signs shall consist of white or coloured sheeting having a smooth outer surface which has the property of retro reflection over its entire surface. It shall be weather resistant and exhibit colour fastness. It shall be new and unused and show no evidence of cracking, scaling, and pitting, blistering, edge lifting or curling and shall have negligible shrinkage or expansion. A certificate of having the sheeting tested for coefficient of retro reflection, daytime colour and luminance, shrinkage, flexibility, liner removal, adhesion, impact resistance, specular gloss and fungus resistance, 3 years outdoor weathering and its having passed these tests shall be obtained from International/Government Laboratory/Institute by the manufacturer of the sheeting and in case the certificate is obtained from international agency, it should also be obtained from Indian agency within 3 years of launching of product by the manufacture in abroad. Alternatively, a certificate conforming to ASTM Specification (D 4956-09) on artificial accelerated weathering requirements from a reputed laboratory in India can be accepted provisionally. In such a situation, the Municipal Commissioner, AMC/Client, if so desires, could seek for a performance guarantee which would be released after receipt of certificate meeting the requirement of three years outdoor weathering of the sheeting.

**6. Description of sheet:**

*Type XI Micro prismatic grade sheeting*

Retro-reflective sheeting typically manufactured as a cube corner. The reflective sheeting shall be retro-reflective sheeting made of micro prismatic retro-reflective material. The retro-reflective surface, after cleaning with soap and water and in dry condition shall have the minimum co-efficient of retro-reflection (determined in accordance with ASTM D 4956-09) as indicated in **Table**

When totally wet, the sheeting shall show not less than 90 percent of the values, of retro-reflection indicated in above Table. At the end of 10 years, the sheeting shall retain at INEW WEST 80 percent of its original retro-reflectance.

**Table Acceptable Minimum Coefficient of Retro-reflection for Type XI Prismatic Grade Sheetin<sup>A</sup> (Candelas per Lux per Square Metre)**

Observation Angle	Entrance Angle	White	Yellow	Orange	Green	Red	Blue	Brown	Fluorescent yellow	Fluorescent yellow	Fluorescent Orange
0.1 <sup>OB</sup>	-4°	830	620	290	83	125	37	25	660	500	250
0.1 <sup>OB</sup>	+30°	325	245	115	33	50	15	10	260	200	100
0.2°	-4°	580	435	200	58	87	26	17	460	350	175
0.2°	+30°	220	165	77	22	33	10	7	180	130	66
0.5°	-4°	420	315	150	42	63	19	13	340	250	125
0.5°	+30°	150	110	53	15	23	7	5	120	90	45
1.0°	-4°	120	90	42	12	18	5	4	96	72	36
1.0°	+30°	45	34	16	5	7	2	1	36	27	14

A Minimum Co-efficient of Retro-reflection ( $R_A$ ) ( $\text{cd.lx}^{-1} \cdot \text{m}^{-2}$ ).

B Values for 0.1° observation angles are supplementary requirements that shall apply only when specified by the purchaser in the contract or order.

**Installation**

Flexible Median Marker shall be fixed by a combination of epoxy adhesive and grouting/Drilling on concrete medians or properly constructed solid medians. The Combination of proper grouting (Drill) Epoxy would help for better application and epoxy giving proper support.

**6. Measurements for Payment**

The payment shall be made on per Number basis.

**8. Rate**

The Contract unit rate shall be payment in full for the cost of application, including all materials, installing it at the site and incidentals to complete the work in accordance with the Specifications

**9. Special Note:**

(1) Contractor shall have to submit the manufacture test certificate of retro reflective sheet before Starting the work at no Extra cost

(2) Contractor Shall have to Submit the test report of retro reflective sheet from Govt. approved Laboratory testing of sheeting at no extra cost before producing

First R.A bill and then after on end when asked by AMC. The contractor shall not be paid extra for same.

(3) Contractor shall have to submit the filled form as mentioned below in Soft (Signed & scanned) and two hard copies.

### USAGE CONFORMANCE CERTIFICATE

**CLIENT NAME** \_\_\_\_\_

**CONVERTER NAME** \_\_\_\_\_

**CONTRACTOR NAME** \_\_\_\_\_

#### **WORK ORDER**

**DETAILS** \_\_\_\_\_

Details of the sign board fixing work is carried out using Name of Manufacturer

Sr no.	Type of work with location	size	Qty	Remarks

Certified that the sign board fixing work have been manufactured using Brand Name of Reflective sheets (According to ASTM D- 4280) and are covered by

the Warranty No.....Dated.....

which will be expired on dated.....

Name of sign board Manufacturer

Name of Converter

Authorized Signatory

Authorized Signatory

## ITEM NO. 22 Supplying and fixing bollard Swiss type

Providing and fixing Swiss type bollard made out of 1.5mm CRC sheet ,height 140cms,bottom dia 23cm,top dia 12cm with direction plate of 30 cm dia fabricated necessary anchors as directed and also provide through out length pipe of 25 NB for the strenthning of bollard and reflectorised Micro Prismatic Grade Sheet (Type XI)and three yellow strip 6 Inches wide of Type XI Retro reflective Sheeting, fixing with P.C.C M25 grade concrete(Foundation size 30cm×30cm×35cm)

The Swiss type bollard shall be approved from the Engineer-In charge before commencement of work.

### 1. Retro Reflective Sheeting

The retro reflective sheeting used on the signs shall consist of white or coloured sheeting having a smooth outer surface which has the property of retro reflection over its entire surface. It shall be weather resistant and exhibit colour fastness. It shall be new and unused and show no evidence of cracking, scaling, and pitting, blistering, edge lifting or curling and shall have negligible shrinkage or expansion. A certificate of having the sheeting tested for coefficient of retro reflection, daytime colour and luminance, shrinkage, flexibility, liner removal, adhesion, impact resistance, specular gloss and fungus resistance, 3 years outdoor weathering and its having passed these tests shall be obtained from International/Government Laboratory/Institute by the manufacturer of the sheeting and in case the certificate is obtained from international agency, it should also be obtained from Indian agency within 3 years of launching of product by the manufacture in abroad. Alternatively, a certificate conforming to ASTM Specification (D 4956-09) on artificial accelerated weathering requirements from a reputed laboratory in India can be accepted provisionally. In such a situation, the Municipal Commissioner, AMC/Client, if so desires, could seek for a performance guarantee which would be released after receipt of certificate meeting the requirement of three years outdoor weathering of the sheeting.

#### 1.1 Description of sheet:

*Type XI Micro prismatic grade sheeting*

Retro-reflective sheeting typically manufactured as a cube corner. The reflective sheeting shall be retro-reflective sheeting made of micro prismatic retro-reflective material. The retro-reflective surface, after cleaning with soap and water and in dry condition shall have the minimum co-efficient of retro-reflection (determined in accordance with ASTM D 4956-09) as indicated in **Table**

When totally wet, the sheeting shall show not less than 90 percent of the values, of retro-reflection indicated in above Table. At the end of 10 years, the sheeting shall retain at least 80 percent of its original retro-reflectance.

**Table Acceptable Minimum Coefficient of Retro-reflection for Type XI Prismatic Grade Sheeting<sup>A</sup> (Candelas per Lux per Square Metre)**

Observation Angle	Entrance Angle	White	Yellow	Orange	Green	Red	Blue	Brown	Fluorescent yellow	Fluorescent yellow	Fluorescent Orange
0.1° <sup>OB</sup>	-4°	830	620	290	83	125	37	25	660	500	250
0.1° <sup>OB</sup>	+30°	325	245	115	33	50	15	10	260	200	100
0.2°	-4°	580	435	200	58	87	26	17	460	350	175
0.2°	+30°	220	165	77	22	33	10	7	180	130	66
0.5°	-4°	420	315	150	42	63	19	13	340	250	125
0.5°	+30°	150	110	53	15	23	7	5	120	90	45
1.0°	-4°	120	90	42	12	18	5	4	96	72	36
1.0°	+30°	45	34	16	5	7	2	1	36	27	14

A Minimum Co-efficient of Retro-reflection ( $R_d$ ) ( $\text{cd.lx}^{-1} \cdot \text{m}^{-2}$ ).

B Values for  $0.1^\circ$  observation angles are supplementary requirements that shall apply only when specified by the purchaser in the contract or order.

## 1.2 Adhesives

The sheeting shall have a pressure-sensitive adhesive of the aggressive-tack type requiring no heat, solvent or other preparation for adhesion to a smooth clean surface, in a manner recommended by the sheeting manufacturer. The adhesive shall be protected by an easily removable liner (removable by peeling without soaking in water or other solvent) and shall be suitable for the type of material of the base plate used for the sign.

The adhesive shall form a durable bond to smooth, corrosion and weather resistant surface of the base plate such that it shall not be possible to remove the sheeting from the sign base in one piece by use of sharp instrument. The sheeting shall be applied in accordance with the manufacturers specifications.

## 1.3 Fabrication

Surface to be reflectorised shall be effectively prepared to receive the retro-reflective sheeting. The aluminium sheeting shall be de-greased either by acid or hot alkaline etching and all scale/dust removed to obtain a smooth plain surface before the application of retro-reflective sheeting. If the surface is rough, approved surface primer may be used. After cleaning, metal shall not be handled, except by suitable device or clean canvas gloves, between all cleaning and preparation operation and application of reflective sheeting/primer. There shall be no opportunity for metal to come in contact with grease, oil or other contaminants prior to the application of retro-reflective sheeting. Complete sheets of the material shall be used on the signs except where it is unavoidable. At splices, sheeting with pressure-sensitive adhesives shall be overlapped not less than 5 mm.

Where screen printing with transparent colours is proposed, only butt joint shall be used. The material shall cover the sign surface evenly and shall be free from twists, cracks and folds. Cut-outs to produce legends and borders shall be bonded with the sheeting in the manner specified by the manufacturer.

## 1.4 Messages/Borders

The messages (legends, letters, numerals, etc.) and borders shall either be screen-printed or of cut out from durable transparent overlay or cut-out from the same type of reflective sheeting for the cautionary and mandatory sign boards. Screen printing shall be processed and finished with materials and in a manner specified by the sheeting manufacturer. For the informatory and other sign boards, the messages (legends, letters, numerals etc.) and borders shall be cut-out from durable transparent overlay film or cut-out from the same reflective sheeting only. Cut-outs shall be from durable transparent overlay materials as specified by the sheeting manufacturer and shall be bonded with the sheeting in the manner specified by the manufacturer. Whenever transparent overlay film is used for making any type of sign, the coloured portion of sign shall have coefficient of reflectivity not less than the reflectivity of type and colour of sheeting normally used, as per table. Cut-out messages and borders, wherever used, shall be either made out of retro-reflective sheeting or made out of durable transparent overlay except those in black which shall be of non-reflective sheeting or opaque in case of durable transparent overlay. Creating coloured areas by means of screen-printing with ink shall not be permitted.

### Special Note:

(1) Contractor Shall have to Submit the manufacture test certificate of retro reflective sheet before Starting the work at no Extra cost

(1) Contractor Shall have to Submit the test report of retro reflective sheet from Govt. approved Laboratory testing of sheeting at no extra cost before producing First R.A bill and then after on end when asked by AMC. The contractor shall not be paid extra for same.

(2) Contractor shall have to submit the filled form as mentioned below in Soft (Signed & Scanned) and two hard copies



**Mode of payment:-**

Item shall be paid in Number of bollard fixed at site shown by the Engineer in charge. Nothing Extra shall be paid for transportation of Bollards from manufacturing place to any site of work within AMC limit.

**Rate**

The Contract unit rate shall be payment in full for the cost of making the road sign, including all materials, installing it at the site and incidentals to complete the work in accordance with the Specifications.

**USAGE CONFORMANCE CERTIFICATE**

**CLIENT NAME** \_\_\_\_\_

**CONVERTER NAME** \_\_\_\_\_

**CONTRACTOR NAME** \_\_\_\_\_

**WORK ORDER DETAILS** \_\_\_\_\_

Details of the bollard fixing work is carried out using Name of Manufacturer

Sr no.	Type of work with location	size	Qty	Remarks

Certified that the bollard fixing work have been manufactured using Brand Name of  
(According to ASTM D 4956-09 TYPE XI) and are covered by  
the Warranty No.....Dated.....  
which will be expired on dated.....

Name of Manufacturer  
Authorized Signatory

Name of Converter  
Authorized Signatory

**ITEM No.23 Poly Urethane:Flexible Bollard**

Providing and fixing Poly Urethane:Flexible Bollard made out of TPU (Thermoplastic Urethane Poly Ethelene) and UV stabilized material, shall have high flexibility and no fading colours, shall have fixed 3 bends of 100mm width type-I retro-reflective sheeting tape of white colour which sheeting shall be fixed on posts using special adhesive, which shall not easy to tear, the cylindrical shape pillar shall have diameter 160mm, height 1370mm, with square base of 250x250mm, it shall have weight over 5.0kgs, Upper circular head shall be made of PE (Poly Ethelene) / PPCP (Polypropylene copolymer) material with 410mm dia, print area of circular head part shall be 390mm, both the parts shall be fixed with each other by rivetting and special glue material, with peripheral boarder of black colour made of same kind of material, which shall have printed one side direction indication sign and another side AMC Logo on micro prismatic type-XI retro-reflective sheeting. The flexible bollards shall be fixed by nail of 12mm dia x 200mm length, by drilling in existing concrete / or any hard surface by drilling and fixing by epoxy resin and hardner of make brand 3M or same kind of approved brand material. Rate shall include cost of bollard with specified material, all kind of required fixing materials and fixed at site

including all fixing charges, surface preparation of any site condition as per work requirements, with all lead and lift, and transportation of any distance. The work shall be executed in direction of the engineer in charge. (rate shall be excluding GST.)

### 1. Aluminium

Aluminium sheets used for Tree Guard sign shall be of smooth, hard and corrosion resistant aluminium alloy conforming to IS 736 - Material Designation 24345 or 1900.

### 2. Retro Reflective Sheeting

The retro reflective sheeting used on the signs shall consist of white or coloured sheeting having a smooth outer surface which has the property of retro reflection over its entire surface. It shall be weather resistant and exhibit colour fastness. It shall be new and unused and show no evidence of cracking, scaling, and pitting, blistering, edge lifting or curling and shall have negligible shrinkage or expansion. A certificate of having the sheeting tested for coefficient of retro reflection, daytime colour and luminance, shrinkage, flexibility, liner removal, adhesion, impact resistance, specular gloss and fungus resistance, 3 years outdoor weathering and its having passed these tests shall be obtained from International/Government Laboratory/Institute by the manufacturer of the sheeting and in case the certificate is obtained from international agency, it should also be obtained from Indian agency within 3 years of launching of product by the manufacture in abroad. Alternatively, a certificate conforming to ASTM Specification (D 4956-09) on artificial accelerated weathering requirements from a reputed laboratory in India can be accepted provisionally. In such a situation, the Municipal Commissioner, AMC/Client, if so desires, could seek for a performance guarantee which would be released after receipt of certificate meeting the requirement of three years outdoor weathering of the sheeting.

### 3. Description of sheet:

*Type IV High intensity micro-prismatic grade sheeting (HIP)*

This sheeting shall be of high intensity retro-reflective sheeting made of micro-prismatic retro-reflective element material coated with pressure sensitive adhesive. The retro-reflective surface after cleaning with soap and water and in dry condition shall have the minimum co-efficient of retro-reflection (determined in accordance with ASTM D 4956-09) as indicated in **Table 6.6**.

**Table 6.6 Acceptable Minimum Coefficient of Retro-Reflection for  
Type IV High Intensity Micro-prismatic Grade Sheeting<sup>A</sup>  
(Candelas Per Lux Per Square Metre)**

Observation Angle	Entrance Angle	White	Yellow	Orange	Green	Pi	Blue	Brown
0.1° <sup>B</sup>	-4°	500	380	200	70	90	42	25
0.1° <sup>B</sup>	+30°	240	175	94	32	42	20	12
0.2°	-4°	360	270	145	50	65	30	18
0.2°	+30°	170	135	68	25	30	14	8.5
0.5°	-4°	150	110	60	21	27	13	7.5
0.5°	+30°	72	54	28	10	13	6	3.5

<sup>A</sup> Minimum Coefficient of Retro-reflection ( $R_A$ )( $cd.lx^{-1}.m^2$ ).

<sup>B</sup> Values for 0.1° observation angles are supplementary requirements that shall apply only when specified by the purchaser in the contract or order.

When totally wet, the sheeting shall show not less than 90 percent of the values of retro-reflection indicated in above Table. At the end of 7 years, the sheeting shall retain at least 80 percent of its original retro-reflectance.

**ITEM NO. 24 Supply and fixing of Spring post** extremely flexible and soft so as not to damage the vehicle the vehicle at collision and to be restored soon at its original. The material of the body should be UV stabilised and non-fading color with 3 bands of high quality of Reflective sheeting of min 50mm. The Height of the post should be 800mm, Top dia of 80mm and base should be 200mm, complete with fixing at site with nails/ anchor fasters as directed by Engineer incharge (As per R.A)

**Measurements for Payment**

The measurement of **Spring post** shall be in numbers of supplied & Fixing.

**Rate**

The Contract unit rate shall be payment in full for the cost of making the **Spring post** including all materials, installing it at the site and incidentals to complete the work in accordance with the Specifications.

**ITEM NO. 25 Directional Type Signboard :** - Providing and fixing direction / any purpose sign boards made out of 2mm aluminum sheet / 4mm ACP (Aluminum composite Panel); size 150 x 120 cm rectangular as per design of IRC-67-2022. Pre-treated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint; reflectorized with Micro Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 4.2 mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:1:2 CC block of size 45 x 45 x 60 Cms. for each leg with (2 nos) 300mm long holdfasts welded with pole in opposite directions of angle section size 32 x 32x 2 mm. Including excavation, curing etc. Complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3-year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting (As per RA)

**Measurements for Payment**

The measurement of **Directional Type Signboard** shall be in numbers of supplied & Fixing.

**Rate**

The Contract unit rate shall be payment in full for the cost of making the **Directional Type Signboard** including all materials, installing it at the site and incidentals to complete the work in accordance with the Specifications.

**ITEM NO. 26 Rubber Flexible-Pole with Base (Traffic Guide Posts)**

**Supply and installation of Rubber Flexible-Pole with Base (Traffic Guide Posts) with a minimum one-year warranty, designed for road safety applications. The Rubber Flexible-Pole should be manufactured using high-quality blends of natural and synthetic rubbers compounded with reinforcing fillers, UV-stabilised colours, and specialised rubber chemicals to ensure durability, elasticity, and resistance to degradation. The material composition must be verified through chemical analysis as a blend of rubbers, fillers, and chemicals per ASTM D 3677-2010.**

**The poles shall feature three Type VIII retroreflective tapes, each with a minimum height of 50 mm, conforming to AIS-090:2005 for enhanced daytime and nighttime visibility with multi-angle reflection. UV-stabilised Orange Red colour; strong/flexible with self-recovery; height 800 ±2 mm; base dia. 220 ±2 mm; stem bottom dia. 80 ±2 mm; stem top dia. 67 ±2 mm; reflector width 51 ±1 mm and weight 2.7 ±5% kg.(As per approved R.A.)**

**Measurements for Payment**

The measurement of **Rubber Flexible-Pole with Base (Traffic Guide Posts)** shall be in numbers of supplied & Fixing.

**Rate**

The Contract unit rate shall be payment in full for the cost of making the **Rubber Flexible-Pole with Base (Traffic Guide Posts)** including all materials, installing it at the site and incidentals to complete the work in accordance with the Specifications.