

COURSE MEASUREMENT REPORT

Name of Event : Lokmat Nashik Maha Marathon 2019

Advertised Road Distance : 3 km, 5 km, 10km & Half-Marathon (21.0975 km)

Race Date : 1st December 2019

Race Director : Mr.Sanjay Patil

Address: c/o Lokmat Media Pvt. Ltd.
2nd Floor, Suyojit Trade Centre,
Sharanpur Road, Nashik - 422002

Phone : +91- 9823144128

Name of Measurement : Anirudha Athani
team leader

Address : Flat No.10, Rushiraj Presidency Apts,
D'Souza Colony, Nashik - 422005, Maharashtra, India

Phone : +91-9822069872

Location of Start : Asphalt Road, Opp Govt Rest House, Nashik.

Location of Finish : Same as Start

Type of Terrain : Mostly flat, Undulating at places

Type of Course : Out-and-back route for all categories

Altitude : 593m at Start/Finish
(in Metres above Sea Level)

Distance between Start : Nil. (Start and finish are at the same point)
and Finish



Signed

Date : 28/11/2019

SUMMARY OF MEASUREMENTS

Dates of Measurement : 27th & 28th November 2019

How many measurements of the course were made : 1

Name of Measurer : Anirudha Athani

How much of the road width is available to the runners throughout the length of the road race course?

Entire Width of Right Carriageway is available to the runners from the Start Point to Mico Circle. Thereafter entire width of Left Carriageway is available for runners.

If the route at turns cannot be described as the 'shortest possible route', explain what restrictions will apply, and how these would be enforced.

For participants of Half-Marathon, In between Ashok Nagar junction to Pimpalgaon Khamb there is no physical road divider inbetween the left and right carriageway. For safety reasons and ensuring that participants run along the measured route organisers need to provide barricading/coning-taping on this section for demarcating the left carriageway available for runners.

Length of the course after any adjustment : Not less than 3 km, 5 km, 10 km, 21.0975 km

Difference between longest and shortest measurement : 0 m

Which measurement was used to establish the final course length and why?

There is a small difference between the Working constant and post-measurement constant. Therefore adjustment is applied to the initial measurement.

OVERVIEW OF THE MEASUREMENT PROCEDURE :

The course is measured using a calibrated bicycle fitted with a Jones Counter. The basis of the measurement is to compare the number of revolutions of the bicycle wheel (recorded in counts) needed to cover the race course with the number of revolutions needed to cover a standard 'calibration course' of known length.

The following steps were followed :

1. Race course was defined after discussions with race director. Route recce was done on the same route by car on 27th Nov 2019 in the afternoon in order to identify the tentative U-turn points for each distance category.
2. The calibration course was selected on a straight and flat section of Trimbak road at ABB Circle near to the start point.
3. On 27th Nov 2019 in the evening the calibration course of 300m was measured and marked with Steel nails and paint. The bicycle was ridden on the said calibration course and pre-measurement calibration was done.
4. Immediately after calibration the bicycle was taken to the start point and the course was measured from the start point towards Trimbakeshwar. 200m, 500m and each km were marked. Tentative turn-around points were measured and marked for 3km, 5km, 10km & Half-Marathon.
5. Post-measurement calibration of the bicycle was done on the calibration course. There was a difference between the working constant and the Finish Constant, so the average of the two constants was taken as the Constant for the day.
6. As the Tentative U-Turn point for 10km came right in front of the gates of a Religious place of worship, which was not acceptable from practical point of view. After discussion with the race organisers it was deemed appropriate to locate the U-turn point 5m ahead of the said gate. Accordingly, decision was taken to shift the location of the Start/Finish point by 5m towards Chandak Circle.
7. Using steel measuring tape, the Start/Finish point was adjusted towards Chandak Circle by 5m.
8. The above 5m distance was added to the adjustment for each distance and the final U-turn points for each distance category were measured using steel tape and marked with steel nails and paint.
9. The measurement process was documented.

DETAILS OF THE CALIBRATION COURSE

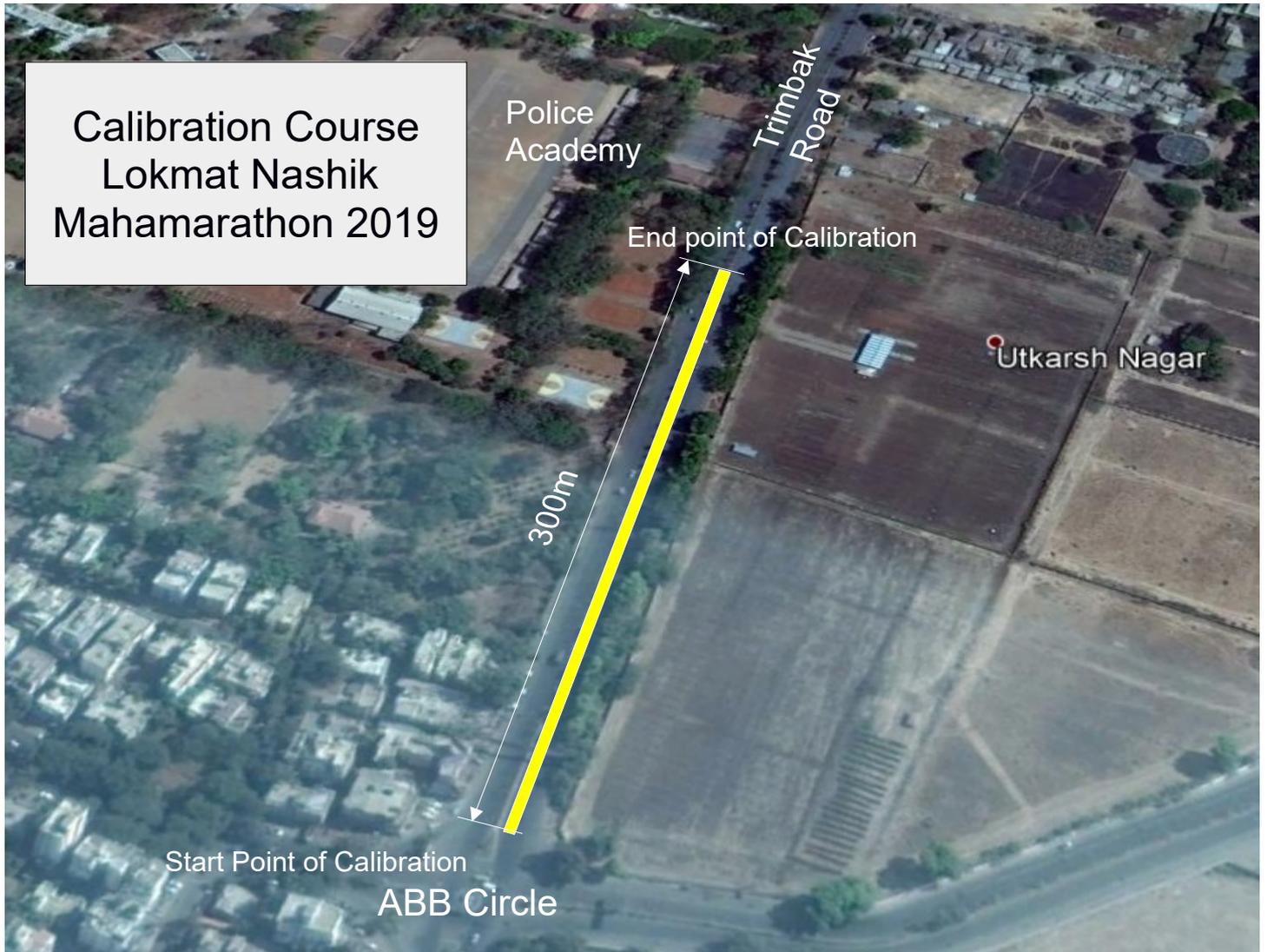
1. Name of Event: Lokmat Nashiik MahaMarathon 2019
2. City/Town : Nashik, Maharashtra State, India
3. Location of Calibration Course: Trimbak Road, between ABB Circle to Police Training Academy, Nashik. Start point : Near Traffic Police Chowki, ABB Circle. End Point : Near Shivang Automobiles Opp. Police Academy Gate.
4. Length of Calibration Course: 300 m
5. Dates Measured : 27th November 2019
6. Method used to measure calibration course: Steel Tape
7. How many times did you measure the calibration course: 2
8. Measurement team Leader : Anirudha Athani
9. Address of Team Leader : Nashik, Maharashtra, India
10. Phone Number of Team Leader : +91-9822069872
11. Email Address of team leader: athani@live.com
12. List name and Duties of Team Members:

i. Mr.Mahesh Mande ii. Mr.Roshan Pathade iii. Mr.Rahul Ahire iv. Mr.Sachin Pawar v. Mr.Aniket Jadhav	}	Marking the points with Spray paint General Assistance
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13. Is the Calibration course straight : Yes.
14. How are the start and finish points marked : Steel Nails & Paint
15. Are the start and finish points located in a road where the bicycle wheel can touch them or elsewhere :

The start/finish points are located on the tar road where bicycle wheel can touch them.
16. Bicycle check : This is a check against miscounting the number of tape lengths. (in case you use a gross measurement check other than a bicycle, please explain). Checked using Garmin GPS watch and also Car odometer.
 - A. Counts for full calibration course: 300m
 - B. Counts for one tape length : 50m
 - C. Divide A by B
 - D Number of full tape lengths : 6

17. Submit a map of this calibration course, showing direction of north, the name of the road, (and relevant cross streets), and the exact location of the start and finish points, including taped distances from the nearby permanent locations.

Map location of Calibration Course



STEEL TAPING DATA SHEET
For measuring a calibration course

Name of Calibration Course : Trimbak Road, between ABB Circle to Police Training Academy.

City/Town and State : Nashik, Maharashtra, INDIA

Date : 27th November 2019

Start Time : 2230 hrs

Finish Time : 2315

Pavement Temperature : Start 20 °C

Finish 20 °C

Measurements and Calculations

1. First Measurement : This establishes tentative start and finish marks which should not be changed until the final adjustment on line 6 below

6	x 50m	+ 0	=	300m
# tape	distance per	partial		measured tape
lengths	tape length	tape lengths		lengths

2. Second Measurement : This checks the measurement to the finish point using a 50 cm offset from the start point.

5	x 50m	+ 49.5	=	249.5m
# tape	distance per	partial		measured tape
lengths	tape length	tape lengths		lengths

3. Average raw (Uncorrected) measurement of the course = 300m

4. Temperature correction : Use the average pavement temperature during measurement. Work out answer to at least 7 digits beyond the decimal point

Correction factor = $1.0000000 + (0.0000116 \times [\text{Celsius Temperature} - 20])$
 = $1.0000000 + (0.0000116 \times [20 - 20])$
 = 1.0000000

5. Multiply the temperature correction factor with the average raw measurement of the course

1.0000000	x	300m	=	300.00000 m
correction factor		average raw measurement		corrected measurement

Final (adjusted) length of the calibration course = 300.00000 m

BICYCLE CALIBRATION DATA SHEET

Name of Event : Lokmat Nashik MahaMarathon 2019

Date of Measurement : 27th & 28th Nov 2019

Name of Measurer : Anirudha Athani

Length of Calibration Course : 300.00000 m

PRE CALIBRATION – Ride the Calibration Course four times, recording data as follows :

Ride	Start Count	Finish Count	Difference
1	998000	001607	3607
2	001607	005214	3607
3	005214	008821	3607
4	008821	012428	3607

Time of the Day : 11.30 pm on 27th Nov 2019

Temperature: 20 °C

WORKING CONSTANT = number of counts in one kilometre calculated from the pre measurement average count, and multiplied by 1.001 (i.e. the short course prevention factor)

Pre measurement Average count = $(3607 + 3607 + 3607 + 3607) / 4 = 3607$

Counts/km = Pre measurement average count x 1000/length of calibration course
= $3607 \times 1000 / 300.00000$
= 12023.3333

Working Constant = counts per km x 1.001
= 12023.3333×1.001
= 12035.3566

POST CALIBRATION – Ride the Calibration Course four times, recording data as follows :

Ride	Start Count	Finish Count	Difference
1	182601	186211	3610
2	186211	189821	3610
3	189821	193431	3610
4	193431	197041	3610

Time of the Day : 0145 hrs on 28th Nov 2019

Temperature: 18°C

FINISH CONSTANT = number of counts in one kilometre calculated from the pre measurement average count, and multiplied by 1.001 (i.e. the short course prevention factor)

Post measurement Average count = $(3610 + 3610 + 3610 + 3610) / 4 = 3610$

Counts/km = Pre measurement average count x 1000/length of calibration course
= $3610 \times 1000 / 300.00000$
= 12033.33333

Finish Constant = counts per km x 1.001
= 12033.33333×1.001
= 12045.3666

CONSTANT FOR THE DAY = The average of the working constant and the finish constant
= $(12035.3566 + 12045.3666) / 2$
= 12040.3616

COURSE MEASUREMENT DATA SHEET

Name of the Event : Lokmat Nashik MahaMarathon 2019

Name of Measurer : Anirudha Athani

Date of Measurement : 27th & 28th November 2019

Start Time : 2330 on 27th Nov 2019 Temperature : 20° C

Finish Time : 0145 on 28th Nov 2019 Temperature : 18° C

Constant for the day : 12040.3616

DESCRIPTION OF THE ROUTE:

1. Start line for all distance categories is located opposite Govt Rest House on the Right Carriageway of Tidke Colony Road towards Mico Circle.
2. After flag off all categories of runners will remain on this carriageway upto Mico Circle. (ie run in the direction against vehicular traffic)
3. At Mico Circle all categories of runners will take a left turn towards ABB Circle on Trimbak Road and run on the left carriageway (ie run in the direction of the vehicular traffic) towards Trimbakeshwar upto their respective U-Turn point.
2. All Categories of Runners will take a u-turn at their respective U-turn point and return to Mico Circle on the same carriageway. (ie run in the direction against vehicular traffic)
3. At Mico Circle all categories of runners will change to right carriageway on Tidke Colony Road towards the finish point (ie run in the direction of the vehicular traffic)

A. MEASUREMENT DATA

Location	Counter Reading	Cumulative Counts	Distance from Start Point in metres	Adjustment in metres
Race Start/Finish opp Govt Rest House, Tidke Colony Road	049400	0	0	Adjusted Start Point by 5m towards Chandak Circle
Opp Gate of Divisional Commissioner Residence on Tidke Colony Road	051807	2407	199.91094m - 5m start pt adj	Adjusted 200m mark by 5m + 0.08906m towards Chandak Circle
Opp Breads & Cakes Shop, near Chandak Circle on Tidke Colony Road	055417	6017	499.73582m - 5m start pt adj	Adjusted 500m mark by 5m + 0.26418m towards Mico Circle
Opp NMC Direction Board kamaan towards Trimbakeshwar on Trimbak Road near Mico Circle	061435	12035	999.55469m - 5m start pt adj	Adjusted 1 km mark towards ABB Circle by 5m + 0.44531m
Opp [REDACTED] [REDACTED] [REDACTED] premises gate, Trimbak Road.	067453	18053	1499.37357m - 5m start pt adj	Adjusted 3km U-Turn point by 5m + 0.62643m towards ABB Circle
Opp Fravashi Academy Parking 1 st Entrance, Trimbak Road	073471	24071	1999.19245m - 5m start pt adj	Adjusted 2km Mark by 5m + 0.80755 towards ABB Circle
Opp Gate No.1 of Maharashtra Police Academy, Trimbak Road	079488	30088	2498.92827m - 5m start pt adj	Adjusted 5 km U-turn point by 5m + 1.07173m towards ABB Circle
Opp Samrat the perfect family fabrics shop, Vikas Colony, Trimbak Road	085506	36106	2998.74714m - 5m start pt adj	Adjusted 3km mark by 5m + 1.25286 m towards Trimbakeshwar
Opp Satpur Police Station near Sakaal Circle, Trimbak Road	097541	48141	3998.30185m - 5m start pt adj	Adjusted 4km mark by 5m + 1.69815m towards Trimbakeshwar
Opp Masjid near Satpur Village, Trimbak Road	109577	60177	4997.93960m - 5m start pt adj	Adjusted 10km U-Turn point by 5m + 2.0604m towards Trimbakeshwar
Opp Laxmi Shiv Nagar Board, Trimbak Road	121612	72212	5997.49429m - 5m start pt adj	Adjusted 6km mark by 5m + 2.50571m towards Trimbakeshwar
Opp Marble House direction board, Trimbak Road	133647	84247	6997.04899m - 5m start pt adj	Adjusted 7km mark by 5m + 2.95101 towards Trimbakeshwar

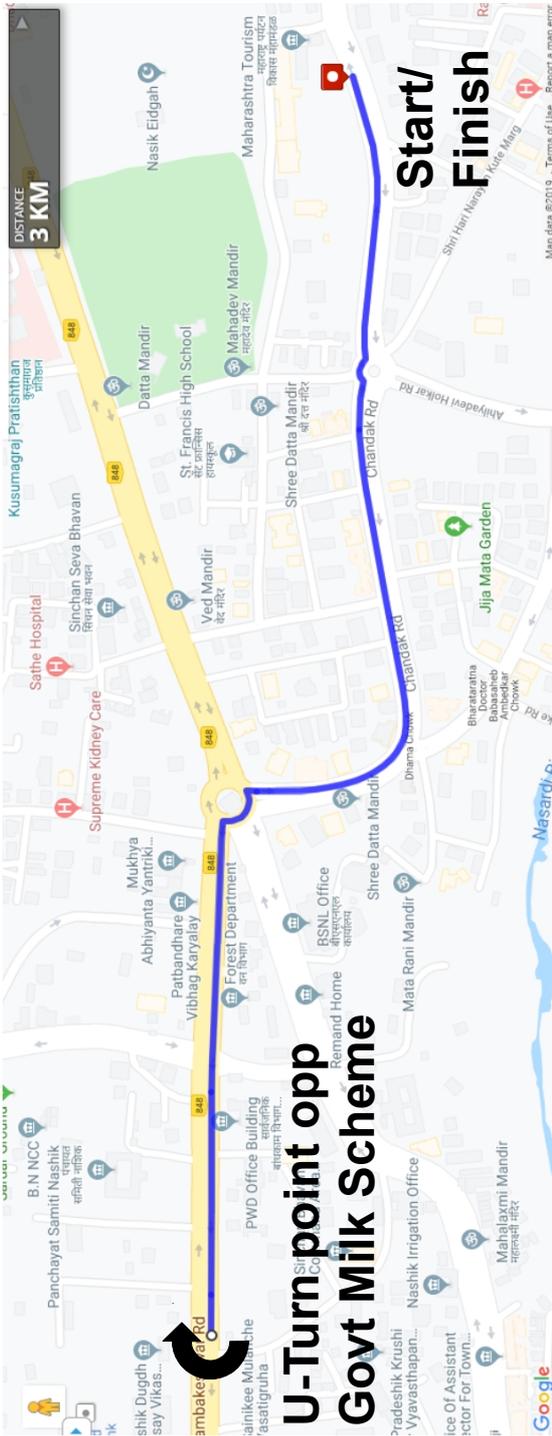
Ahead of Vishnu priya shop, Shivraya Hospital Board near Old Octroi Naka, Pimpalgaon Bahula	145683	96283	7996.68674m - 5m start pt adj	Adjusted 8km mark by 5m + 3.31326m towards Trimbakeshwar
Between Hotel Cloud and Hotel Masala Bites, Trimbak Road	157718	108318	8996.24144m - 5m start pt adj	Adjusted 9km mark by 5m + 3.75856 m towards Trimbakeshwar
Ahead of HP Petrol Pump, Vasali Phata, Trimbak Road	169754	120354	9995.87919m - 5m start pt adj	Adjusted 10km mark by 5m + 4.12081m towards Trimbakeshwar
On Culvert, just ahead of Sarul Road phata, Belgaon Dhaga, Trimbak Road	176358	126958	10544.3677m - 5m start pt adj	Adjusted Half-Marathon U-Turn point by 5m + 4.3823m towards Trimbakeshwar

B. DISTANCE CALCULATIONS

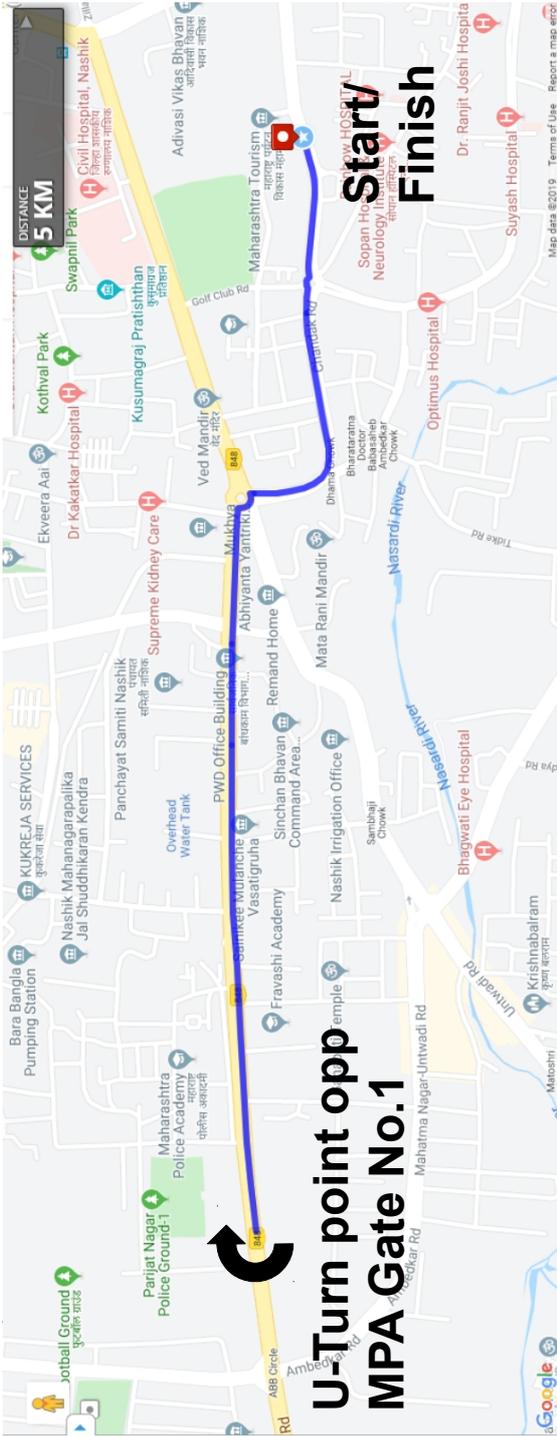
Race Distance	Desired Distance of U-Turn Point	Distance of Tentative U-Turn Point as measured	Adjustment	Final Distance of Course
3 km	1500.00000 m	1499.37357m - 5m	0.62643m + 5m	1500 x 2 = 3000m
5 km	2500.00000 m	2498.92827m - 5m	1.07173m + 5m	2500 x 2 = 5000m
10km	5000.00000 m	4997.93960m - 5m	2.0604m + 5m	5000 x 2 = 10000m
Half-Marathon	10548.75000 m	10544.3677m - 5m	4.3823m + 5m	10548.75 x 2 = 21097.5m

ROUTE MAPS

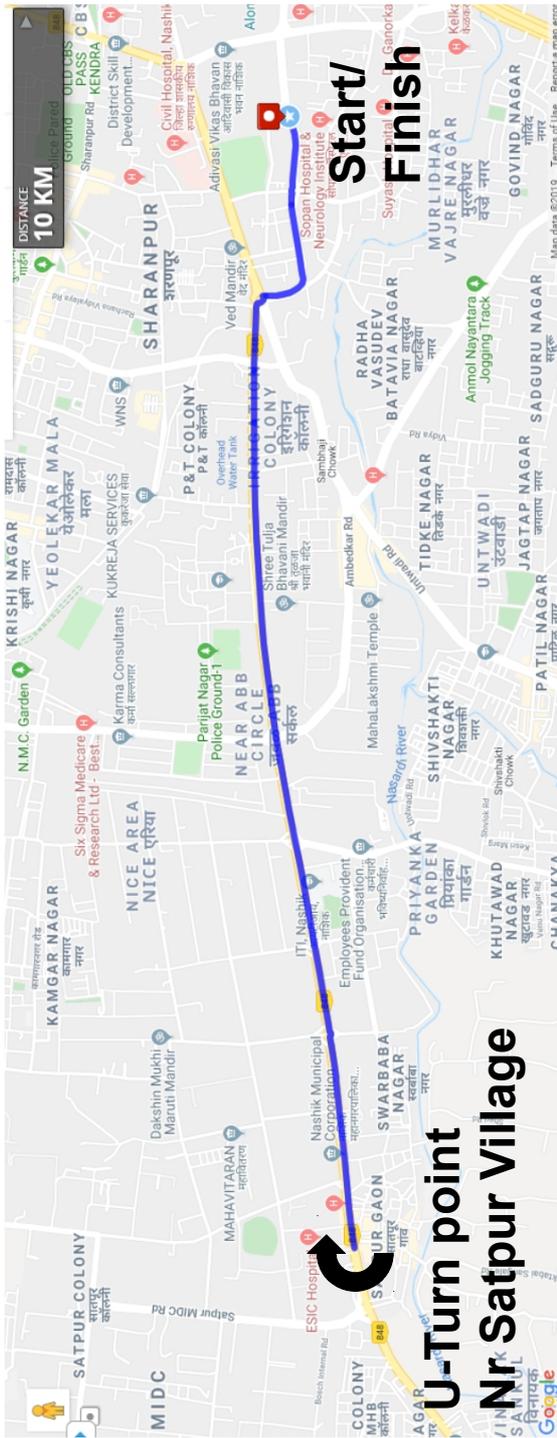
ROUTE MAP FOR 3 KM



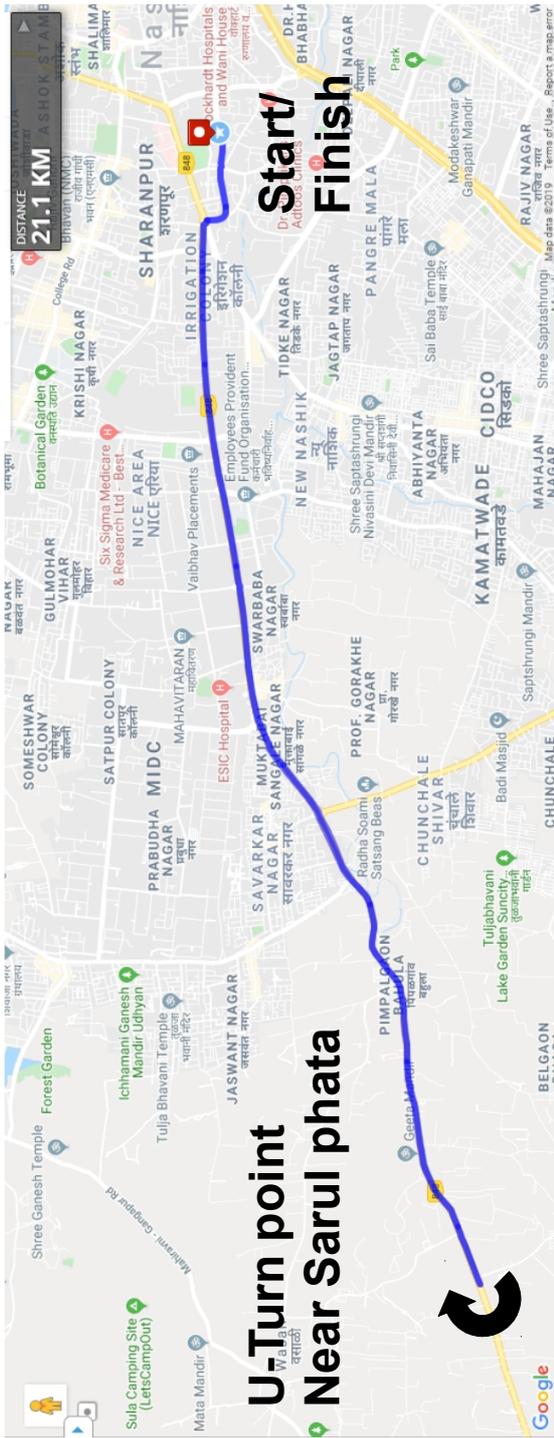
ROUTE MAP FOR 5 KM



ROUTE MAP FOR 10 KM



ROUTE MAP FOR HALF-MARATHON

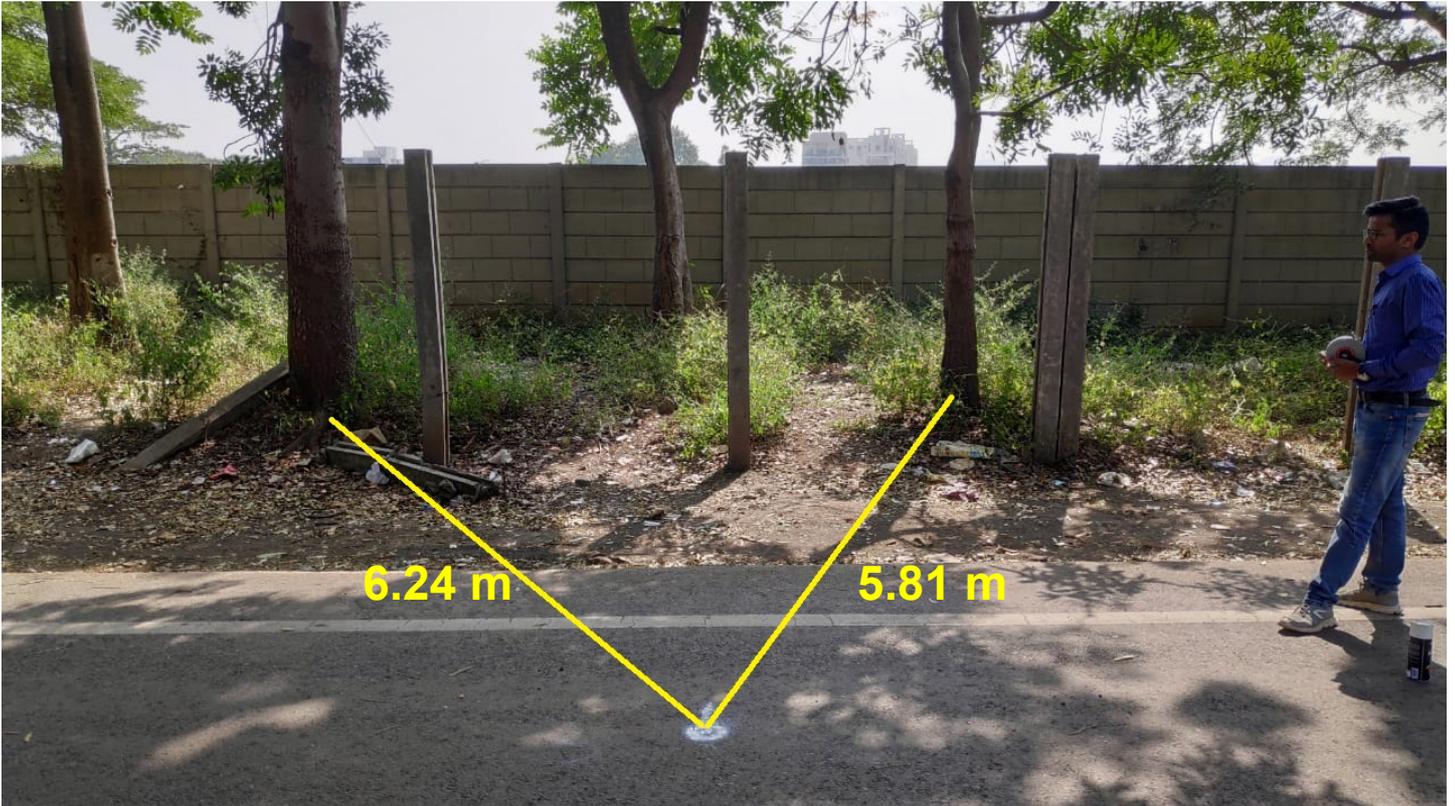


PHOTOGRAPHS:

CALIBRATION COURSE START POINT



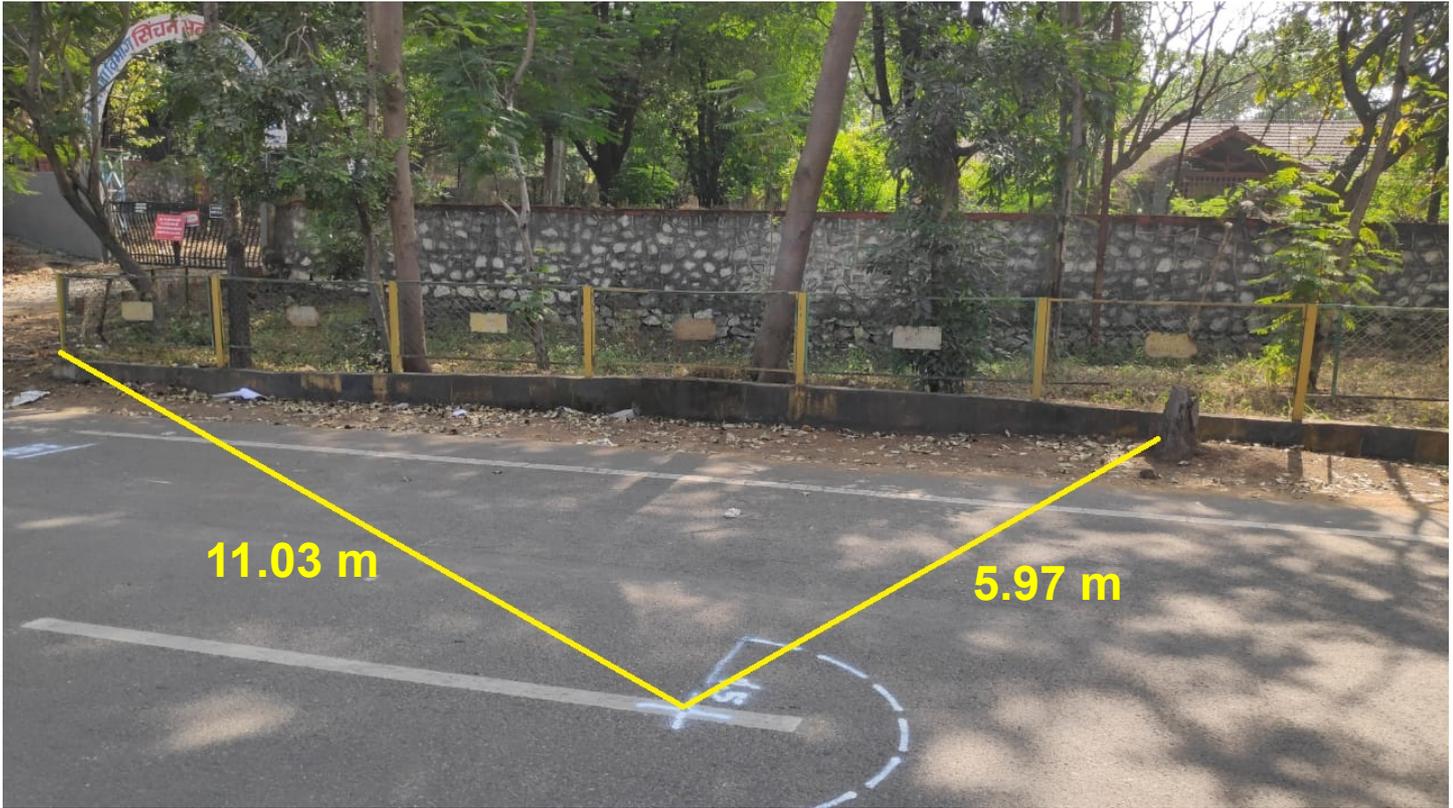
CALIBRATION COURSE END POINT:



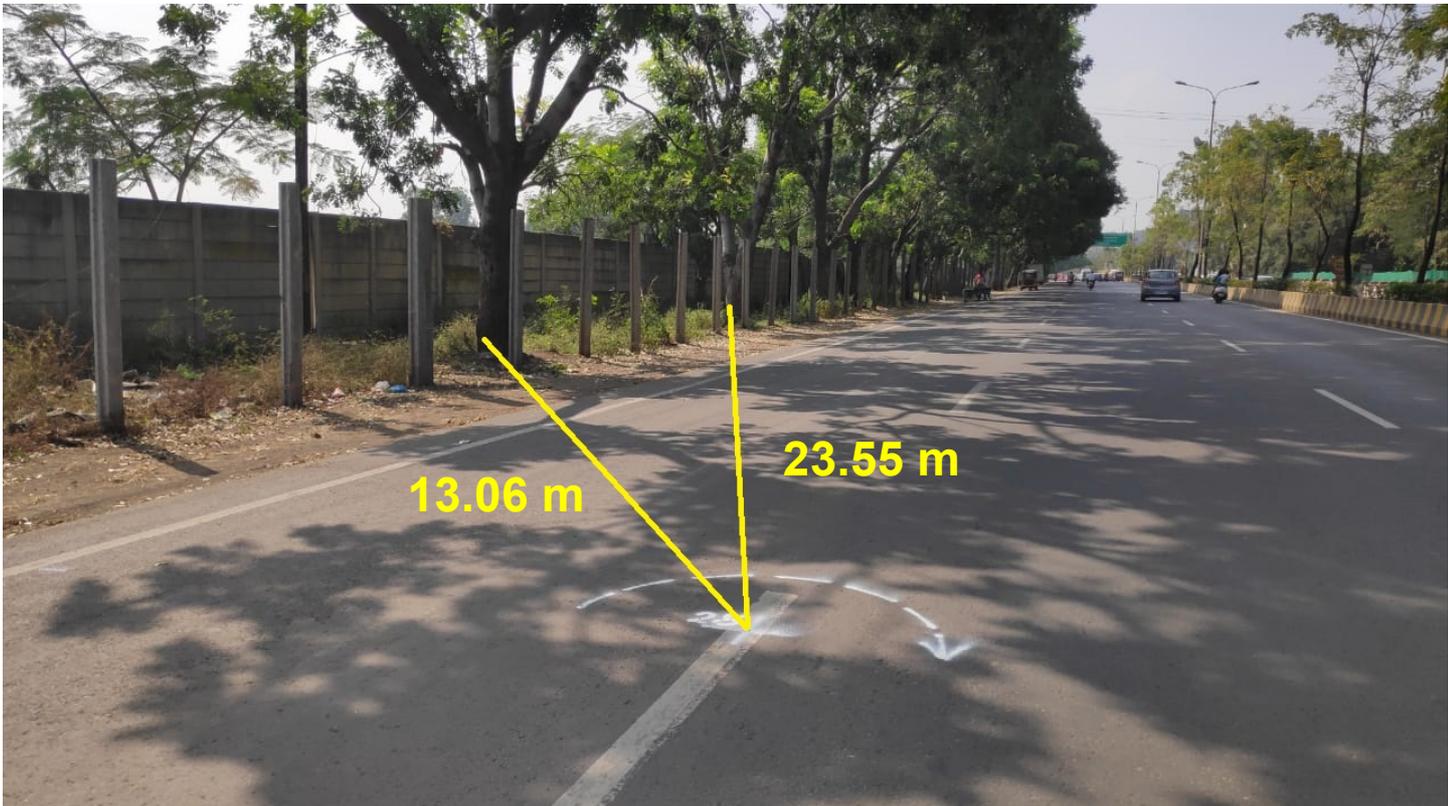
START/FINISH POINT:



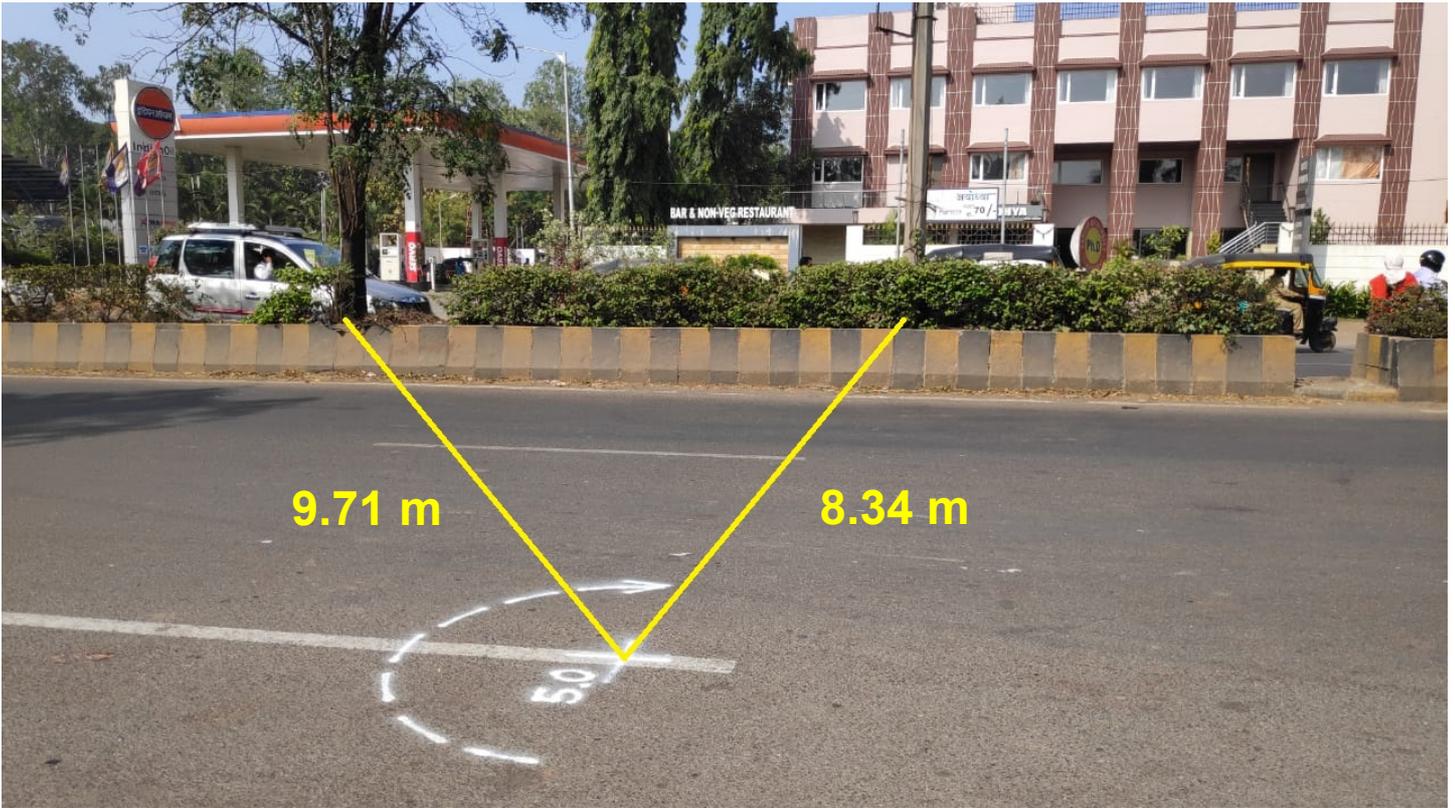
3KM U-TURN POINT:



5-KM U-TURN POINT



10 KM U-TURN POINT



HALF-MARATHON U-TURN POINT:

