Beogradski Ultramarathon

Measurement course and certificate application

APPLICATION FOR CERTIFICATION OF A ROAD COURSE

Name of event: Belgrade Ultramarathon Self-Transcendence 6/12/24 Hour Race

Advertised race distance: 1300m Race date: ____________

Race director: Irina Skerl

Address: Sri Chinmoy Marathon Team, Hilandarska 24, 11000 Beograd

Phone: +381 11 245 2025 Fax: ____________ Email: scmt.rs@srichinmoyraces.org

Name of measurement team leader: Ivan Rečević

Address: Bulevar Zorana Đinđića 166

Phone: 063-370-956 Fax: ____________ Email: irecevic@gmail.com

Location of start: Kalemegdan Fortress, Belgrade, Serbia

Location of finish: Kalemegdan Fortress, Belgrade, Serbia

Type of terrain (please tick): Flat Undulating Hilly

Type of course (please tick): Loop Out & back Point to point Other

Altitude (in metres above sea level): Start 70m Finish 70m

Distance, in a straight line, between start and finish: 0m

SUMMARY OF MEASUREMENTS

Date(s) of measurement: 15.3.2015

How many measurements of the course were made? one

Names of measurers: Ivan Rečević

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

Completely available to racers. It is a park.

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

Length of course after any adjustment: 1357m

Difference between longest and shortest measurement:

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

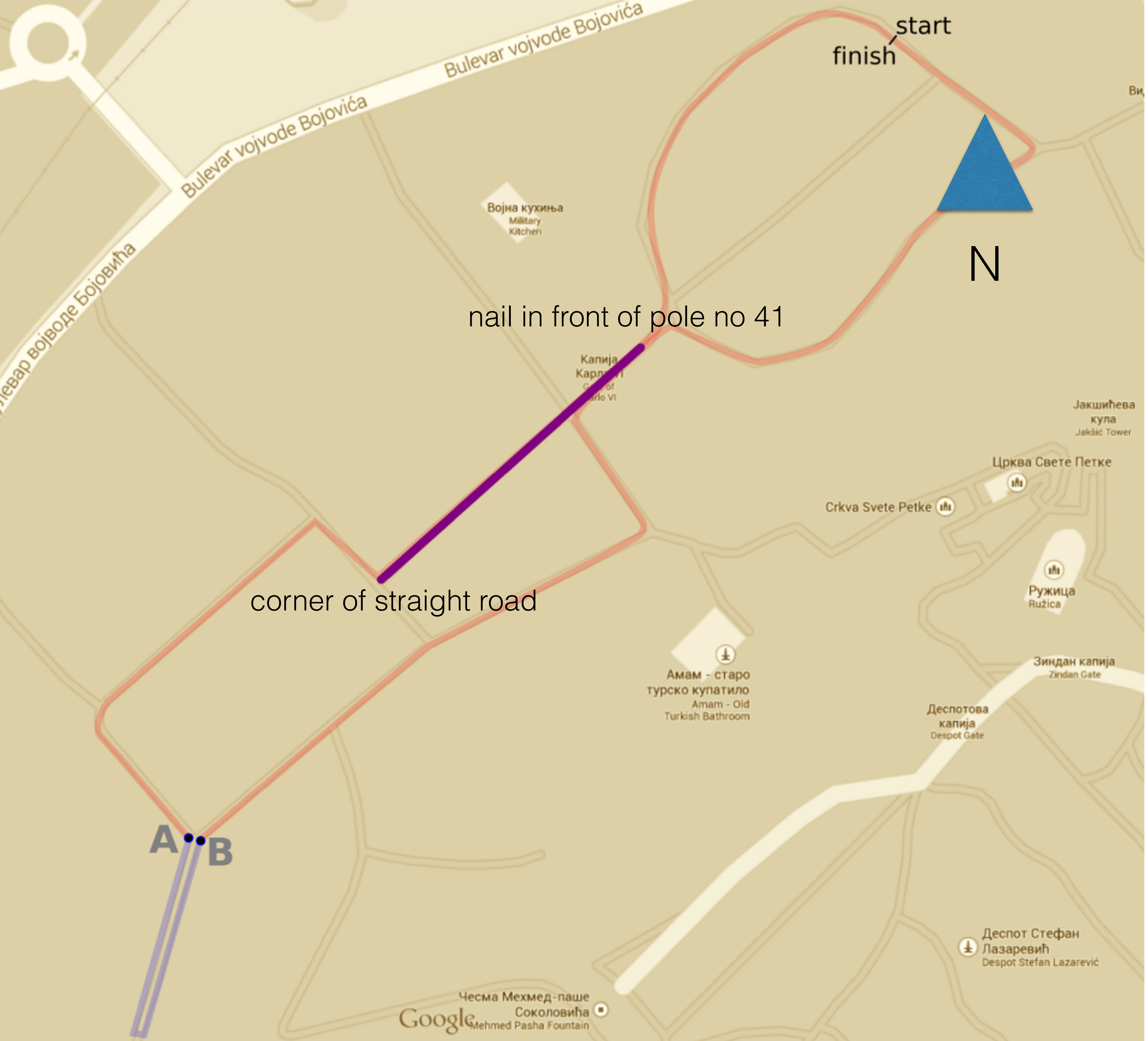
OVERVIEW OF THE MEASUREMENT PROCEDURE

Provide an overview below of the processes and procedures you followed when undertaking this measurement.

We started with calibration - taking into account current temperature (3C) and decrease of measure by 4cm. After calibration course measure, we moved through course understanding how runners will move on the course. We identified pedestrian walk on the south side of park which we can use for any adjustment in order to round the course to nice number.

Measurement of course was done in three sections. From start to point A (corner of exit to pedestrian walk), from A until the end of pedestrian walk, back to point B (oposite to point A), and from B to finish.

After measurement we did again measurement of calibration course in order to identify any changes.



DETAIL OF THE CALIBRATION COURSE

1 Name of event: Belgrade Ultramarathon Self-Transcendence 6/12/24 Hour Race

2 City/town: Beograd, Serbia

3 Location of calibration course: Donji Kalemegdan - Kapija Kartla VI, Beograd

4 Length of calibration course: 200m

5 Date(s) measured: 15.03.2015

6 Method used to measure calibration course: Steel tape

7 How many times did you measure the calibration course? 4 times + 4 times

8 Measurement team leader: Ivan Rečević

9 Address of team leader: Bulevar Zorana Đinđića 166/120, Beograd

10 Phone contact of team leader: +38163370956

11 Email address of team leader: irecevic@gmail.com

12 List names and duties of team members: ____________________

13 Is the calibration course: STRAIGHT? YES PAVED? YES

14 How are the start and finish points marked? steel nails, and physical obstacles.

15 Are the start and finish points located in the road where a bicycle wheel can touch them, or elsewhere?

start and finish points are located in the road and bicycle can touch.

16 Bicycle check. This is a check against miscounting the number of tape lengths. (if you use a gross measurement check other than a bicycle, please explain.)

A. Counts for full calibration course ____________

B. Counts for one tape length ____________

C. Divide A by B ____________

D. Number of full tape lengths ____________

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

STEEL TAPING DATA SHEET
For measuring a calibration course

Name of calibration course: Belgrade Ultramarathon Self-Transcendence 6/12/24 Hour Race

City/town and State: Beograd, Serbia

Date: 15.03.2014

Start time: 10:20 Finish time: 11:30

Pavement temperature: Start 3 Finish 3 Average 3
(thermometer shaded from direct sun)

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.

4	x	50m	+	0	=	200m
# tape lengths		distance per tape length		partial tape length		measured distance

2 Second measurement. This checks the distance between the SAME tentative start and finish points marked in the first measurement, but use new intermediate taping points.

4	x	50m	+	0	=	200m
# tape lengths		distance per tape length		partial tape length		measured distance

3 Average raw (uncorrected) measurement of course 200m

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

Correction factor = 1.0000000 + (.0000116 x [Celsius temperature – 20])

Correction factor =

NOTE: For temperatures below 20C, factor is less than one
For temperatures above 20C, factor is greater than one

5 Multiply the temperature correction factor by the average raw measurement of the course (line 3)

0,9998028	x	200m	=	199,96056m
correction factor		avg. raw measurement		corrected measurement

6 If you wish, you may now adjust the course to obtain an even distance, such as one kilometre. This is not necessary as you may choose instead to use an odd-distance calibration course whose endpoints are pre-existing permanent objects in the road to guard against hazards such as repaving. If you adjusted the course, explain why you did it.

Final (adjusted) length of calibration course 199,96m

BICYCLE CALIBRATION DATA SHEET

Name of event: Beogradski ultramaraton

Date of measurement 15.03.2015

Name of measurer: Ivan Rečević

Length of calibration course: 199,96m

PRE-CALIBRATION - ride the calibration course four times, recording data as follows:

Ride	Ride	Counts	Relative	
1	Ride 1	779131	2.264,0	
2	Ride 2	781395,5	2.264,5	
3	Ride 3	783659	2.263,5	
4	Ride 4	785923	2.264,0	

Time of day: 10:20 Temperature: 3

WORKING CONSTANT = number of counts in one kilometre, calculated from the pre-measurement average count, and multiplied by 1.001 – the 'short course prevention factor'

Pre-measurement average count = 2264

Counts per km = pre-measurement average count x 1000/length of calibration course in metres 11.322,233

Working Constant = counts per km x 1.001 = 11,3336

POST-CALIBRATION - ride the calibration course four times, recording data as follows:

Ride	Ride	Counts	Relative	
1	Ride 1	821034	2.264,0	
2	Ride 2	823299	2.265,0	
3	Ride 3	825563	2.264,0	
4	Ride 4	827828	2.265,0	

Time of day: 11:30 Temperature: 3

FINISH CONSTANT = number of counts in one kilometre, calculated from the post-measurement average count, and multiplied by 1.001 – the 'short course prevention factor'

Post-measurement average count = 2264,5

Counts per km = post-measurement average count x 1000/length of calibration course in metres 11.324,733

Finish Constant = counts per km x 1.001 = 11,3361

CONSTANT FOR THE DAY = the average of the working constant and the finish constant = **11,3348**

COURSE MEASUREMENT DATA SHEET

Name of event: Beogradski ultramaraton

Name of measurer: Ivan Rečević

Date of measurement: 15.03.2015

Start time: 10:20 Temperature: 3

Finish time: 11:30 Temperature: 3

Constant for the Day: 11,3348 counts/km

MEASUREMENT DATA

Measured point	Counter reading	Cumulative counts	Cumulative distance in metres	Adjustment in metres

Course	Beogradski Ultramaraton						
Date of measurement		15.3.2015					
Time of riding of calibration course		10:20		Time of riding - calibration course finish	11:30		
Temperature		3		Temperature	3		
Type of course		Circular					
Measurement		Steel tape		Bycicle tires	airless		
Location	Kalemegdan, Beograd, Serbia						
Starting count	776867			Starting count	818770		
Ride	Counts	Relative		Ride	Counts	Relative	
Ride 1	779131	2.264,0		Ride 1	821034	2.264,0	
Ride 2	781395,5	2.264,5		Ride 2	823299	2.265,0	
Ride 3	783659	2.263,5		Ride 3	825563	2.264,0	
Ride 4	785923	2.264,0		Ride 4	827828	2.265,0	
	Average	2.264,0	counts	Constant of the day	Average	2.264,5	counts
	Distance	199,96056	m	11,3348	Distance	199,96056	m
	For 1km	11.322,233			For 1km	11.324,733	
	Workign constant	11,3336			Finish constant with correction	11,3361	
Starting count	Relative	Absolute	Meters (work cnst)	Description			
Section 1							
802400	0	0	0	start			
808153	5753	507,61	507,61	Shortest distance to point A (exit to pedestrian road)			
810299	2146	189,35	696,96	End of pedestrian road			
812441	2142	189,00	885,95	Shortest distance to point B (oposite to point A)			
817787	5346	471,70	1.357,65	finish (same as start)			
	Total measured		Meters (with cnst of day)				
	15.387		1357,500019	m			

Desired length of course: 1300m

Length of course as measured: 1357,65m

Note any adjustments made to the course after measurement:
As organizer wanted course with 1300m, we re-measured section from A to B in order to achieve full length of 1300m. 160,35m from A (1.817 counts)