

COURSE MEASUREMENT REPORT

- REPORT FOR INTERNATIONAL CERTIFIED COURSE –

INFORMATION ABOUT EVENT AND COURSE
Event: Birkenes IL 21 km
Technical Organiser: Birkenes IL - Friidrett
City/Place: Birkeland, Norway
Date of Arrangement: 25.May 2024
Date and time for measurement: 23.April 2024 - 12 pm
Measured distance(s): 10 km + 21 km – This report is for 21 km
Length of calibration course: 350 m
Terrain: Flat <input type="checkbox"/> Slightly hilly <input type="checkbox"/> Hilly <input checked="" type="checkbox"/> Terrain <input type="checkbox"/>
Type of course route: Closed loop <input checked="" type="checkbox"/> Back and forth <input type="checkbox"/> A to B <input type="checkbox"/> Other <input type="checkbox"/>
Race surface: Asphalt
Elevation Start - Finish: 0
Description of start: Birkenes IL Stadium – Light pole
Description of finish: Same as start
Distance, in a straight line, between start & finish: 0 m
Start and Finish marked: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Km-markings: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Measurement direction: Running direction <input checked="" type="checkbox"/> Opposite running direction <input type="checkbox"/>
National record can be approved: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

CONTACT INFORMATION		
	Measured by:	Organizer:
Contact person:	Erling Hiorth	Andreas Emil Hansen
Phone:	+47 91337338	+47 45804500
Email:	Erling.hiorth@gmail.com	Birkenes.friidrett@gmail.com

It is hereby confirmed that the course has been measured by an A- or B certified international certified course measurer from Norwegian Athletics. The course is measured in accordance with AIMS and Norwegian athletics regulations, and the distance(s) has the minimum reported length(s). The survey is valid for 5 years, except if the route is changed.

28.April 2024 *Erling Hiorth*

Date

Signature by Course measurer

Date

Signature by AIMS

Norwegian Athletic Federation

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Sognsveien 75 J, 0840 Oslo, NORWAY
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Norwegian Championship

Half Marathon – 21 km
Birkeland, Norway
25.May 2024

CALIBRATION COURSE AND PROCEDURE – 23.Apr.2024 – 11 am	
Length of measuring tape (steel measuring tape only)	50 m
Length of calibration course 1st measurement	350,00 m
Length of calibration course 2nd measurement	349,996 m
Possible 3rd measure (max. 1 cm diff per 100m 1 st and 2 nd)	No
Average of measurements before adjustments	349,998 m
Temperature (road or measuring tape)	10 degree
Adjustment cf. $D-(D*(1+(temp-20)*0,0000115))$	- 0,04 m temp.
Measured calibration distance after adjustment	349,995 m (+3,7 cm on ground)
Distance from start/finish to calibration distance	200 m

CALIBRATION INFORMATION - (max 8 counts difference of 1000 m between 4 measurements, ie 2 counts of 300m and 3 count of 400m)						
	Pre-measurement:			Post measurement:		
	Date and Time: 23.Apr – 11 am			Date and Time: 23.Apr – 2:15 pm		
	Start	End	Diff.	Start	End	Diff.
1st measure	643200	647111	3911	818600	822507	3907
2nd measure	647111	651020	3909	822507	826416	3909
3rd measure	651020	654931	3911	826416	830323	3907
4th measure	654931	658839	3908	830323	834233	3910

	Pre measurement	Post measurement	
Average (1+2+3+4) / 4	3909,75	3908,25	Today's constant. Either highest or average of before and after measurement
Constant 1 km	11170,882	11166,596	
Addn. +1‰	11,171	11,167	
Measurement constant (rounded)	11182,053	11177,763	11180

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MEASUREMENT PROCEDURE		
Measurement constant	11180	
Measured Distance	Counter	Description of place
	675000	Pre-set Start (and Finish) - Stadium
239,8	677681	Preliminary Start 10 km - Stadium
1557,4	695093	Mark 1 – Start main loop – 1 st round
2754,2	725885	Mark 2 – Start of adjustment / side loop
877,2	735692	Mark 3 – Preliminary turning point side loop
860,8	745316	Mark 2 – End side loop (opposite side of road)
4116,1	791334	Mark 4 – Intermediate point
54,8	791947	Mark 1 – Intermediate – to close main loop
-	792529	Mark 4 – Back to intermediate point – not incl.
1803,1	812688	Pre-set Finish (and Start) - Stadium
12.263,5 m		Total measured without adjustments
2754,2	695093 - 725885	Mark 1 – Mark 2 (2 nd round)
877,2	725885 - 735692	Mark 2 – Mark 3 (2 nd round)
860,8	735692 - 745316	Mark 3 – Mark 2 (2 nd round)
4116,1	745316 - 791334	Mark 2 – Mark 4 (2 nd round) – excl. mark 4 to 1
+ 8.608,3 m		Total measured duplicate distances
4x 57 m	Steel tape	Moved mark 3 / turning point further out
+ 228,0 m		Total measured adjustments
21.099,8 m		Total measured course

CONCLUSION OF MEASUREMENT

1. General information about race course and start/finish
 - Start / finish line inside the stadium and fixed. Course length adjusted by moving turning point further out (+57m).
 - There is 1,8 km before the course enter into a closed loop of approx. 8,7 km which is run twice, then return to finish in same course of 1,8 km.
 - The course was measured by one B-measurer (21 km, this report), one C-measurer (for 10 km race following same route except 1 loop and not mark 2-3) and the race organizer. Results were compared and verified between the two measurements.
2. Measurement of calibration course
 - 200 m from start/finish, straight/flat walking path on asphalt
 - Measured in accordance with procedure, 3 persons
 - Marked at both ends, adjusted for temperature and adjusted +3,7 cm on ground
3. Calibration of bicycle
 - Calibrated in accordance with procedure, 4 measures, deviation 3 counts ok
4. Measurement of the course
 - From pre-set start to finish continuous, closed loop measured once
5. Post calibration of bicycle
 - Same procedure, 4 measures, deviation 3 counts ok
6. Course adjustments
 - Turning point at far end of race adjusted by +57 m which is run 4 times
7. Overall length of the course
 - The course is not shorter than half marathon
8. Additional info
 - The organizer will set up cones/fences on all course separations and corners as shown on attached pictures
 - Special attention to be made at mark 1-2-3-4 including guards to ensure correct route is followed
 - Cycle path between mark 2 and 3 – separation cones to be used

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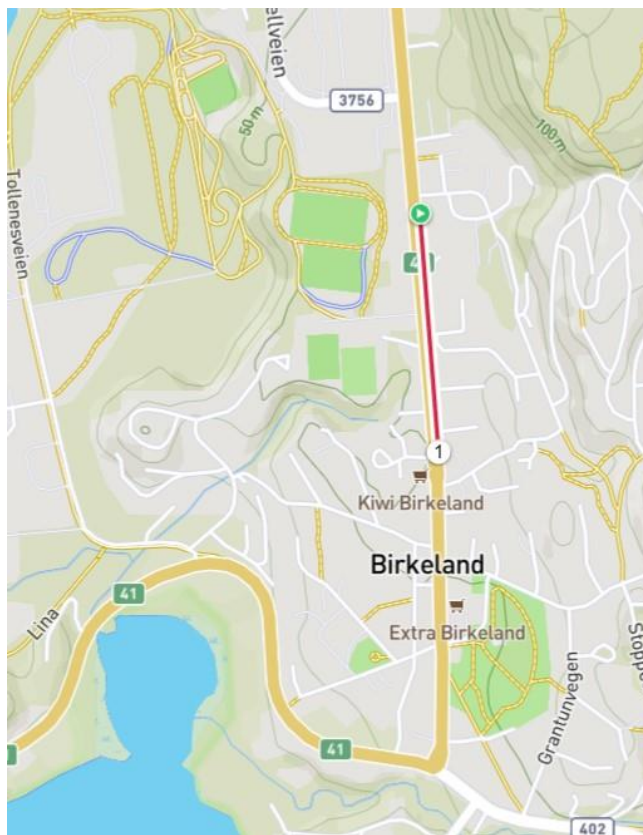
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CALIBRATION COURSE MAP

Straight / flat pavement 200 m from stadium with no road crossings



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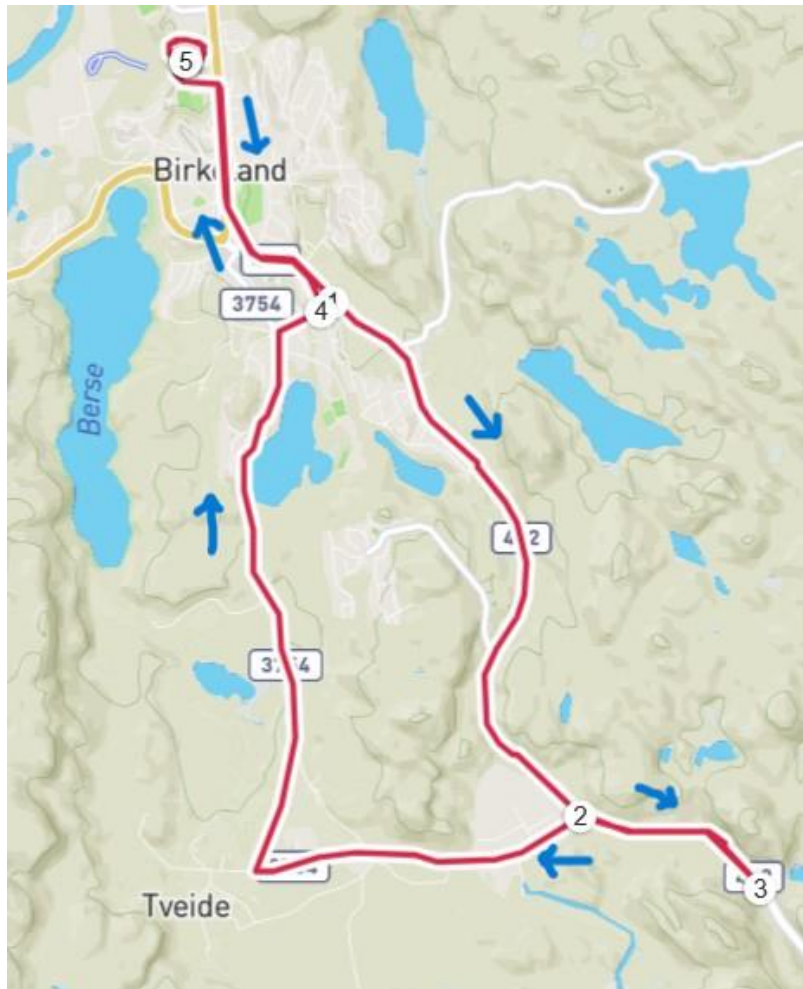
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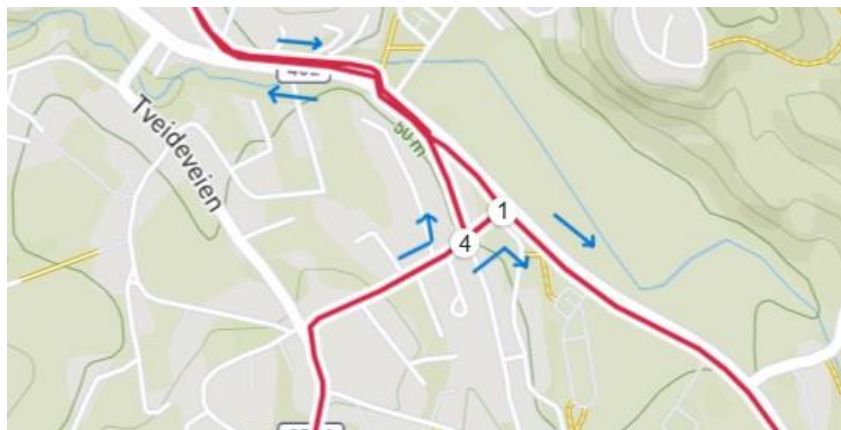
COURSE MAP & DESCRIPTION

Start / finish at Mark 5 – turning point at mark 3

Course direction: Mark 5 – 1 – 2 – 3 – 2 – 4 – 1 – 2 – 3 – 2 – 4 – 5



Mark 4 to mark 1 is run once before start on 2nd round



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Start / Finish 21 km

Turning point – mark 3 – 4,9 m from fence edge



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DOCUMENTATION / PICTURES – Separation / turning points

Right turn on pavement into main road



Right side of mark before crossing of road



On pavement upon return to main road



Right side of mark before crossing of road



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Mark 2 - Left picture – South/east - straight on left side cycle path – guards and cones reqd.

Mark 2 - Right picture – North/west direction – turn left into road



Road between mark 4 and 1 – to be run once

Left picture – mark 4 – turn left after 2nd round - (mark 1 is down in the end of picture)

Right picture – mark 1 – after 1st round turn right, ie start 2nd round

