

Measurement of US Men's Olympic Trials Marathon Course Birmingham, Alabama August 15-17, 2003

The course of the US Men's Olympic Trials marathon course was pre-validated in August by a team from the extremes of the US and Canada. Organized by Doug Loeffler of Florida, and Rick Melanson of Birmingham, it attracted Al Dausman, who flew in from the state of Washington for the chance to measure an Olympic Trials course. Laurent Lacroix, from Winnipeg, Manitoba, made a driving Odyssey. He came east and picked up Bernie Conway in London, Ontario, then swung south and collected Mike Wickiser in Akron and Pete Riegel in Columbus.



Mike Wickiser had a dandy point-and-shoot digital thermometer

This group of four was the first to arrive, and they went directly to the start, did some scouting, and laid out a 300 metre calibration course very close to the start.

The group then went to the Tutwiler Hotel and checked in. That evening the rest of the team arrived. Tennessee certifier Dave Rogers drove in with Carla, his wife. Doug Loeffler flew in from Florida. And Rick Melanson, who measured the course, was there. Doug passed out yellow shirts to be worn during the ride.

Next day, Saturday, the group laid out a calibration course on 6th Street, close to the finish. Now we were all set for an uninterrupted calibration-to-start-to-finish-to-calibration ride. The rest of the day was spent in touring the course and on individual pursuits.

Sunday at 7 AM everybody left the Tutwiler for the start line. We arrived at the calibration course at 7:30 and everybody got calibrated. Doug Loeffler collected all the calibration data. When the police escort showed up at 8:30, as agreed, we lined up behind Rick Melanson, who was our guide, and took off.



The team ready to start the course ride

We were met at each 5 mile split by Doug, who, with Carla Rogers and Jack Karn, was collecting data.

Upon reaching the finish line, we let Doug get the data and then went to 6th street, a few blocks away, to recalibrate. Then Pete, Doug and Mike went to Mike's room to enter the data into Mike's laptop. Pete had prepared a calculation program beforehand, and it correctly calculated the results.

Results were pleasing, as they showed that the course had passed its validation, and the adjustments needed to bring it up to the full nominal-plus-SCPF were minor.



Team after data-taking at mile 15

Pete Riegel had brought along a "London Marathon 2003 – Staff" jacket, and had announced at dinner that it would be awarded to the rider with the median measurement. This turned out to be Bernie Conway.

With calculations done, all were given a floppy disc with the data and rough calculations, and the various groups dispersed and went home.

.....Pete Riegel

**RESULTS OF TEAM PREVALIDATION OF US MEN'S OLYMPIC TRIALS MARATHON COURSE
BIRMINGHAM, ALABAMA - AUGUST 15-17, 2003**

All calculations use average constant and include 1.001 Short Course Prevention Factor

Calibration Course Layout:

Location: Willow Lane, near Start, uphill to south August 15, 2003 - 1:00 PM Bernie Conway - tip, Laurent Lacroix - tail 6 x 50 m = 300.00 m Pete Riegel - tip, Mike Wickiser - tail 10 x 30 m + 0.020 m = 300.020m Tape temperature - 50C Average measured length = 300.01 metres Temperature correction factor = 1.000348 Corrected length = 300.1144 metres 11.4 cm was removed from the course. Final length = 300.0004 300.00 was used in subsequent calculation	Location: 6th Avenue, near Finish, flat August 16, 2003 - 9:00 AM Al Dausman - tip, David Rogers - tail 6 x 50 m = 300.00 m Laurent Lacroix - tip, Pete Riegel - tail 6 x 50 + 0.00 m = 300.00 m Tape temperature = 32 C Average measured length = 300.00 metres Temperature correction factor = 1.000139 Corrected length = 300.0418 metres 4 cm was removed from the course Final length = 300.0018 300.00 was used in subsequent calculation
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Calibration course length = 300.00 metres

Counter readings as recorded

Rick Melanson	Pete Riegel	Dave Rogers	Laurent Lacroix	Bernie Conway	Al Dausman	Mike Wickiser
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Precalibration - Willow Lane, August 17, 7:30 AM, dry, sunny, 77F							
Begin ride 1	32587	74840	462000	11735	972800	6800	95700
End ride 1, begin ride 2	35980	78159.5	465387	15427	976248	10180.5	98508
End ride 2, begin ride 3	39377	81477	468774.5	19123	979700	13562.5	101316
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End ride 4	46164	88113	475547.5	26510.5	986602.5	20327	106932

Course Measurements - Counter readings obtained in riding order shown from left to right above.							
Start	53200	3700	485900	30000	998000	31000	15600
Mile 5	144258	92556	576646	128953	1090453	121565	90782
Mile 15	227495	173869	659664	219472	1175042	204420	159572
Mile 10	235370	181556	667515	228030	1183042	212254	166082
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CALCULATED VALUES

Rick Melanson	Pete Riegel	Dave Rogers	Laurent Lacroix	Bernie Conway	Al Dausman	Mike Wickiser
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Ride 4	3395	3316.5	3386.5	3695.5	3451.5	3385	2808

Average count	3394.25	3318.25	3386.875	3693.875	3450.625	3381.75	2808
Precalibration counts/km	11325.48	11071.89	11300.87	12325.23	11513.59	11283.77	9369.36

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Postcalibration counts/km	11321.31	11065.22	11298.79	12310.63	11514	11276.27	9363.521
Calibration change, cts/km	-4.17	-6.67	-2.09	-14.60	0.42	-7.51	-5.84

Constant for day, cts/km	11323.40	11068.56	11299.83	12317.93	11513.79	11280.02	9366.44
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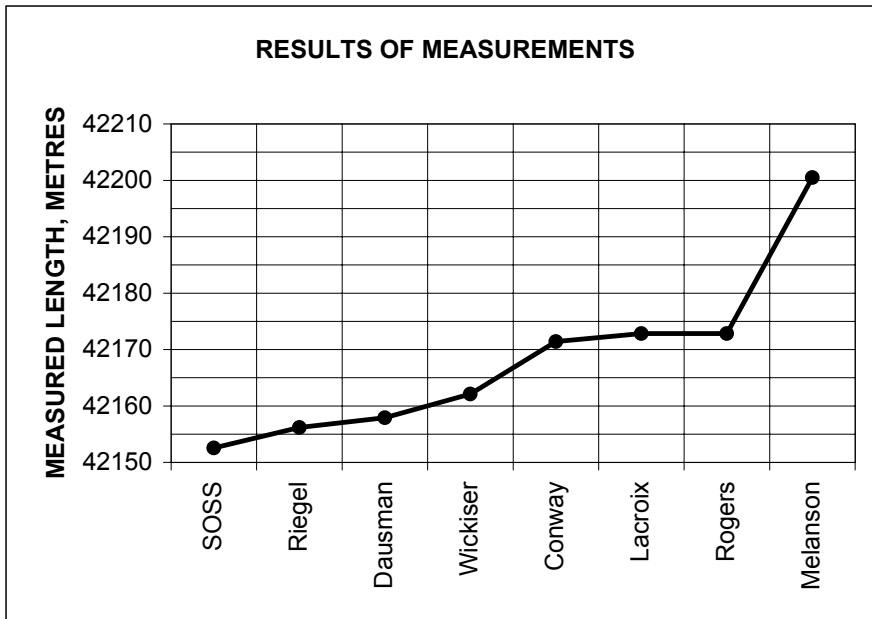
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Start							
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Mile 10	7875	7687	7851	8558	8000	7834	6510
Mile 25	75380	73625	75194	81959	76618	75032	62323
Mile 20	7868	7677	7845	8545	7991	7827	6500
Mile 15	7850	7664	7831	8538	7979	7813	6484
Finish	6639	6480	6619	7210	6747	6604	5486

	Measurement - metres obtained on intervals							Shortest Split
Start								
Mile 5	8041.58	8027.79	8030.74	8033.25	8029.76	8028.80	8026.74	8026.74
Mile 15	7350.89	7346.31	7346.84	7348.56	7346.75	7345.29	7344.31	7344.31
Mile 10	695.46	694.49	694.79	694.76	694.82	694.50	695.03	694.49
Mile 25	6657.01	6651.72	6654.44	6653.63	6654.45	6651.76	6653.86	6651.72
Mile 20	694.84	693.59	694.26	693.70	694.04	693.88	693.97	693.59
Mile 15	693.25	692.41	693.02	693.14	692.99	692.64	692.26	692.26
Finish	586.31	585.44	585.76	585.33	585.99	585.46	585.71	585.33

OVERALL COURSE MEASUREMENTS

	Rick Melanson	Pete Riegel	Dave Rogers	Laurent Lacroix	Bernie Conway	Al Dausman	Mike Wickiser	Shortest Split
Start to Mile 15	15392.47	15374.09	15377.58	15381.80	15376.51	15374.09	15371.05	15371.05
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Finish	586.31	585.44	585.76	585.33	585.99	585.46	585.71	585.33
Total	42200.50	42156.17	42172.85	42172.83	42171.42	42157.91	42162.12	42152.55

SOSS	42152.55	
Riegel	42156.17	
Dausman	42157.91	
Wickiser	42162.12	
Conway	42171.42	Median measurement
Lacroix	42172.83	
Rogers	42172.85	
Melanson	42200.50	



In group measurements, the median measurement may be taken to lie close to the best value. Bernie Conway had the median measurement of 42171.42 metres.

In order to bring the course to full length, 23.58 metres will be added to the course at the start.

Peter S. Riegel
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Columbus, OH 43221-1368
phone: 614-451-5617
fax: 614-451-5610
email: riegelpete@aol.com

Prevalidation of Course Modification
U. S. Men's Olympic Trials Marathon Course

On August 17, 2003, a group of seven riders prevalidated the course of the U. S. Men's Olympic Trials Marathon, originally certified as AL 02017 JD. Required adjustments were made to the course, resulting in certified splits at all 5 mile points and the finish. The resultant course was certified as AL 03001 DL.

Recently it was learned that the International Association of Athletics Federations (IAAF) intended to enforce its newly-inaugurated course standard to apply to those who qualify for the Olympics. The standard requires that a course have a drop of no greater than 1 metre per kilometre, and a straight-line separation between start and finish of no more than 50 percent of course length (the US limit is 30 percent).

The separation of the pre-validated course was within the limit, at 35 percent, but the elevation drop was excessive, at 1.9 m/km. It was decided to relocate the start to a lower elevation. Rick Melanson, the local course measurer, consulted with race management and found a new location, and established its position. The new start location resulted in the course being changed for its first 1.5 miles.

Pete Riegel, IAAF "A" measurer, was sent to Birmingham to pre-validate the altered course. Using the previously pre-validated position of the 5 mile split, the course was measured from the new start to the 5 mile point, and adjusted. The course was certified as AL 03050 PR.

Enclosed are:

- 1) New course certificate
- 2) Course map of AL 03050 PR
- 3) Course map of AL 02017 JD
- 4) Course map of AL 03001 DL
- 5) Calculations
- 6) USGS topographic maps of start and finish.

Peter S. Riegel
November 13, 2003



Road Running Technical Council
USA Track & Field
Measurement Certificate



Name of the course U. S. Men's Olympic Trials Marathon Distance 42.195 km
 Location (state) Alabama (city) Birmingham
 Type of course: road race calibration track Configuration: Out + 3 Loops
 Type of surface: paved 100 % dirt % gravel % grass % track %
 Altitude (feet above sea level) Start 720 ft Finish 610 ft Highest 730 ft Lowest 600 ft
 Straight line distance between start & finish 12.9 km Drop 0.79 m/km Separation 30.6 %
 Measured by (name, address, & phone) Rick Melanson - 1235 Parliament Ln
Birmingham, AL 35216 205-979-1731

Race contact (name, address, & phone) Valerie McLean - Trak Shak - 2841 18th St S
Birmingham, AL 35209

Measuring Methods: bicycle steel tape electronic distance meter
 Number of measurements of entire course: 2 Date(s) when course measured: 17 Aug, 9 Nov 2003
 Race date: 7 Feb 2004 Course paperwork submission date: 13 Nov 2003
 Difference between 2 best measurements of course: 16 m Certification code: AL 03050 PR

Replaces AL 03001 DL (if applicable)

Notice to Race Director
 Use this Certification Code in *all* public
 announcements relating to your race.

Be It Officially Noted That

Based on examination of data provided by the above named measurer, the course described above and in the map attached is hereby certified as reasonably accurate in measurement according to the standards adopted by the Road Running Technical Council. If *any* changes are made to the course, this certification becomes void, and the course must then be recertified.

Validation of Course — In the event a National Open Record is set on this course, or at the discretion of USA Track & Field, a validation remeasurement may be required to be performed by a member of the Road Running Technical Council. If such a remeasurement shows the course to be short, then all pending records will be rejected and the course certification will be cancelled.

This certification expires on December 31 in the year 2013

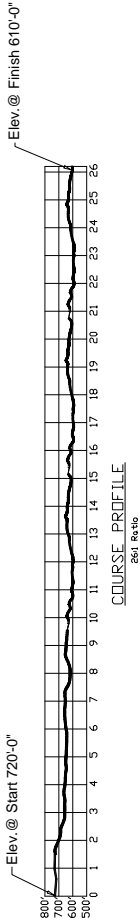
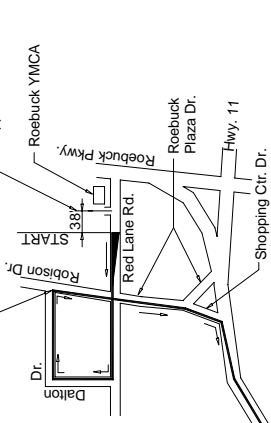
AS NATIONALLY CERTIFIED BY:

 _____ Date: November 13, 2003

Pete Riegel – Certifier, RRTC, USA TF – 3354 Kirkham Road – Columbus, OH 43221-1368
 Phone: 614-451-5617 Fax: 614-451-5610 email: Riegelpete@aol.com

AL 03050 PR

NOTE:
From this point to the 9.5 mi. point downtown runners are restricted to the right 2 lanes



2004 U.S. MEN'S OLYMPIC TRIALS MARATHON

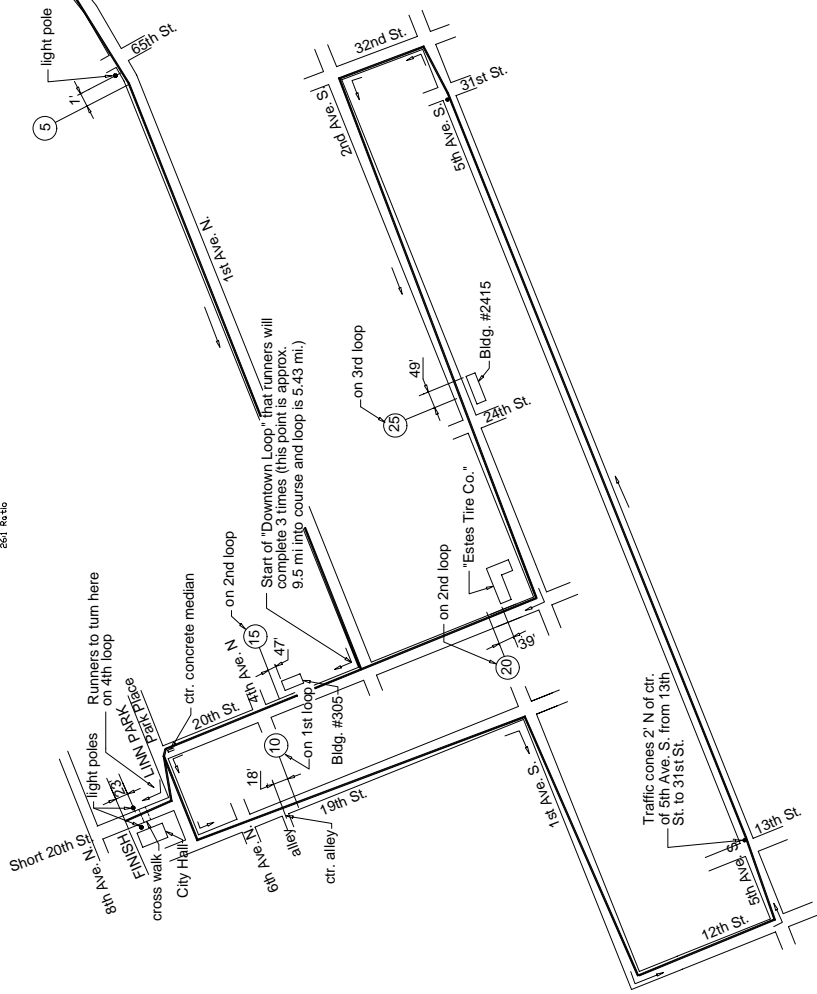
BIRMINGHAM, ALABAMA
(MAP NOT TO SCALE)

MEASURED BY: RICK MELANSON
1235 PARLIAMENT LN.
BIRMINGHAM, AL 35216
(205)979-1731

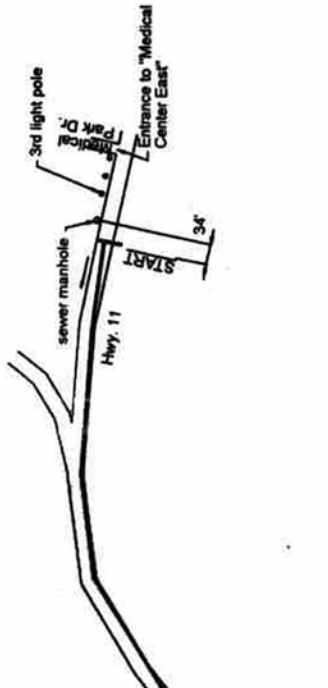
ON 09-08-02 & 09-14-02 USING CAL COURSE #AL97012JD
AND ON 11-09-03 USING CAL COURSE #AL03038BDC

RACE DIRECTOR: VALARIE MCLEAN
TRAK SHAK
2841 18TH ST. S.
BIRMINGHAM, AL 35209
(205)970-5644

COURSE DESCRIPTION:
The run begins on Red Lane Rd. close to the Roebuck YMCA and runs west to Dalton Dr., turns right and runs to where Dalton Dr. turns 90° to the right and continues to Robison Dr., where runners turn right and cross Red Lane Rd. where road changes to Roebuck Plaza Dr. Runners stay on Roebuck Plaza Dr. until it splits to the left and then runners continue on Shopping Ctr. Dr. to 1st Ave. N., turn right and run on 1st Ave. N. to 20th St. where the "downtown loop" begins. The runners turn right on 20th St. and run to Park Place, turn left and run to 19th St., turn left and run to 1st Ave. S., turn right and run to 12th St., turn left and run to 5th Ave. S., and run the loop 2 more times. On the 4th loop when the runners reach Park Pl. they will turn left as usual and then turn right at Short 20th St. and finish just past the cross walk between City Hall and the Court House.



Traffic cones 2' N of cr. of 5th Ave. S. from 13th St. to 31st St.



AL02017JD



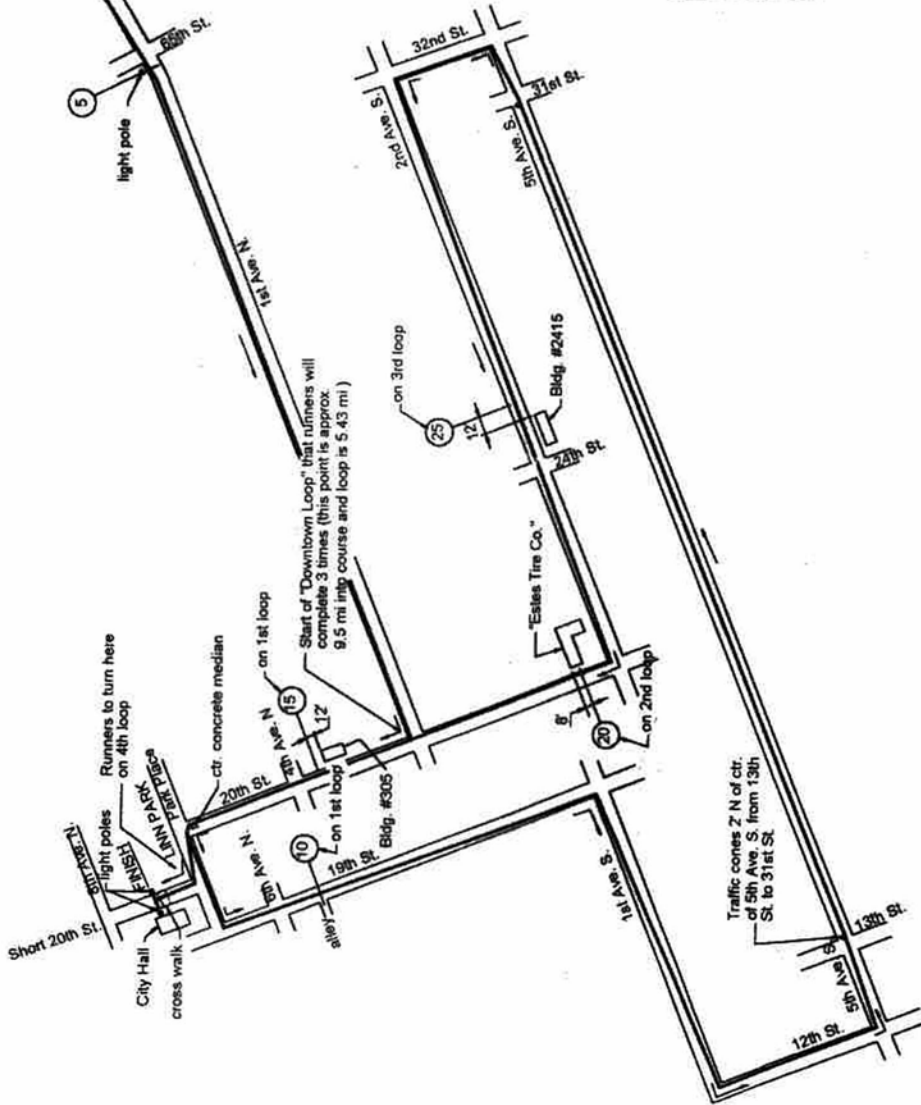
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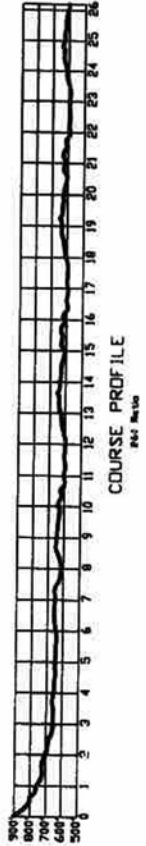
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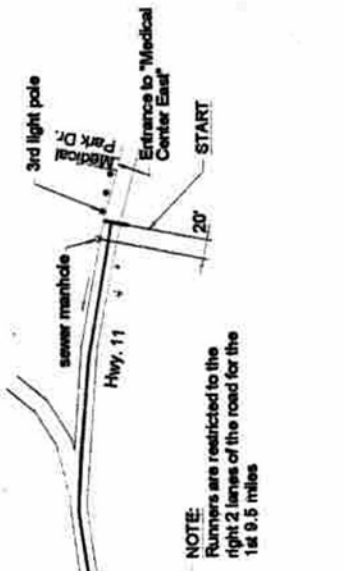
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COURSE DESCRIPTION:

Race will begin on Hwy. 11 on the east side of town and run to where Hwy. 11 merges into 1st Ave. N., runners stay on 1st Ave. N. to 20th St. where the "downtown loop" begins, turn right and run to Park Place, turn left and run to 19th St., turn left and run to 1st Ave. S., turn right and run to 12th St., turn left and run to 5th Ave. S., turn left and run to 32nd St., turn left and run to 2nd Ave. S., turn left and run to 20th St., turn right and run to 1st Ave. N. where the loop begins again and run the loop 2 more times. On the 4th loop when the runners reach Park Place they will turn right on Short 20th St. and finish just past the cross walk between City Hall and the Court House.

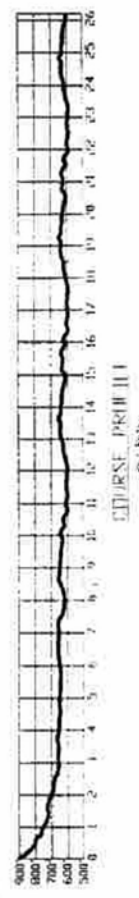
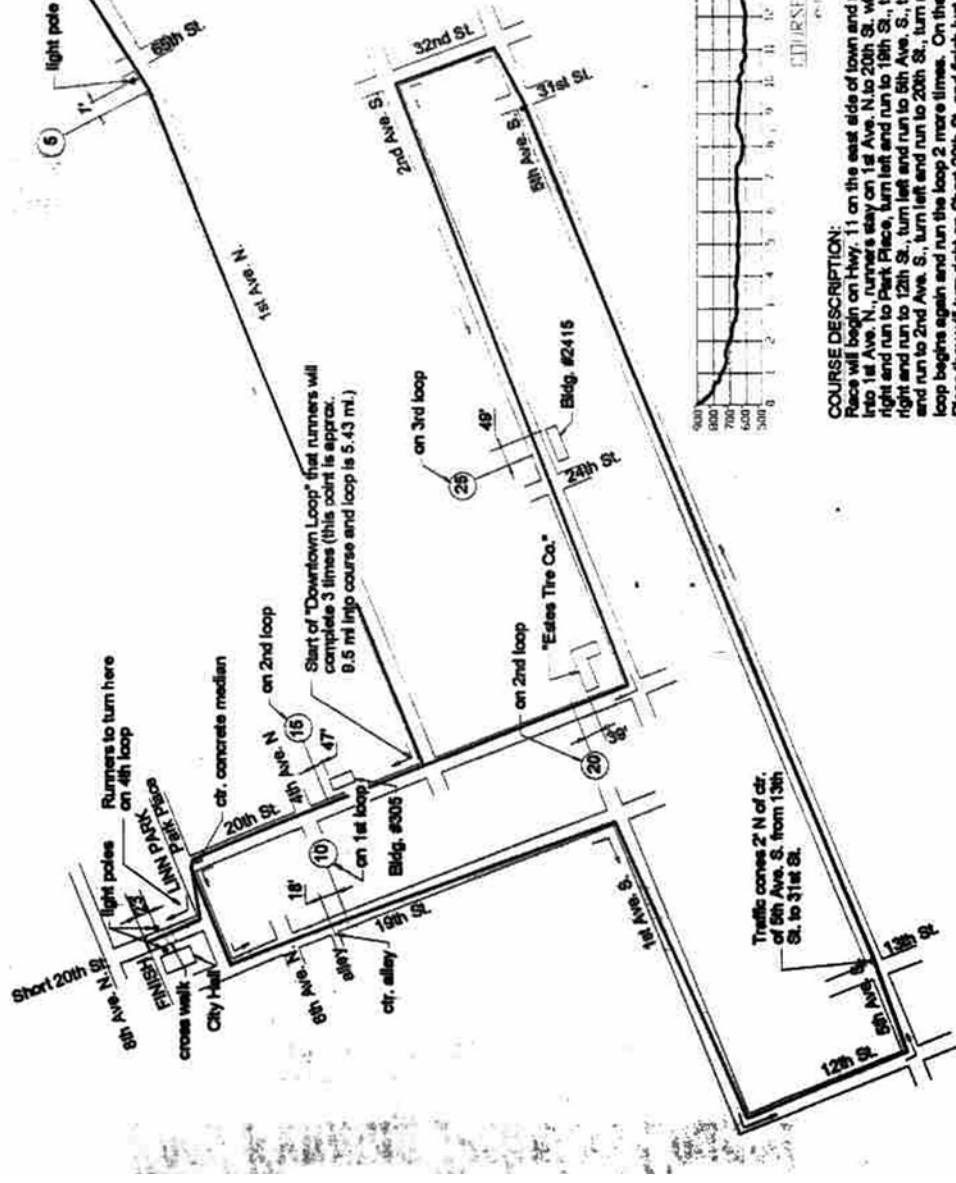




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AL03001 DL

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	Measurement - metres obtained on intervals							Shortest Split
Start								
Mile 5	8041.58	8027.79	8030.74	8033.25	8029.76	8028.80	8026.74	8026.74
Mile 15	7350.89	7346.31	7346.84	7348.56	7346.75	7345.29	7344.31	7344.31
Mile 10	695.46	694.49	694.79	694.76	694.82	694.50	695.03	694.49
Mile 25	6657.01	6651.72	6654.44	6653.63	6654.45	6651.76	6653.86	6651.72
Mile 20	694.84	693.59	694.26	693.70	694.04	693.88	693.97	693.59
Mile 15	693.25	692.41	693.02	693.14	692.99	692.64	692.26	692.26
Finish	586.31	585.44	585.76	585.33	585.99	585.46	585.71	585.33

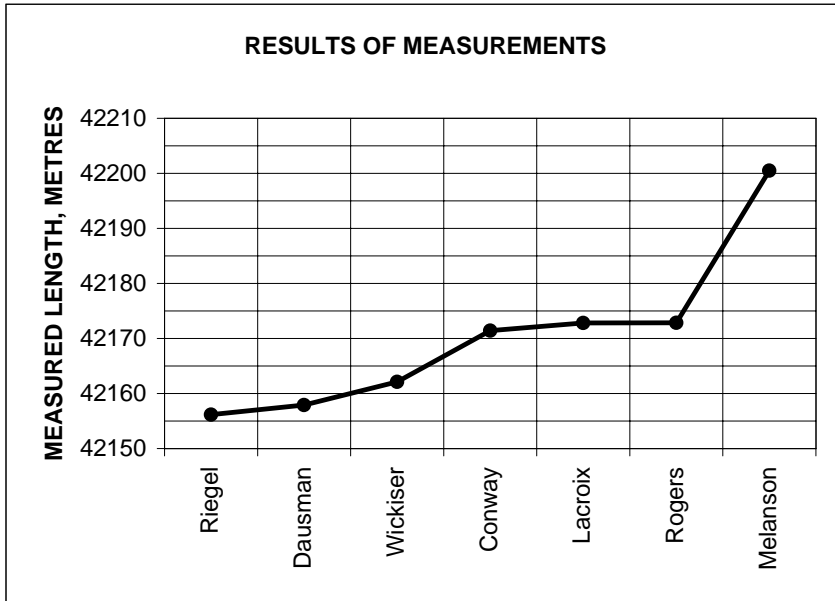
OVERALL COURSE MEASUREMENTS

	Rick Melanson	Pete Riegel	Dave Rogers	Laurent Lacroix	Bernie Conway	Al Dausman	Mike Wickiser	Shortest Split
Start to Mile 15	15392.47	15374.09	15377.58	15381.80	15376.51	15374.09	15371.05	15371.05
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Finish	586.31	585.44	585.76	585.33	585.99	585.46	585.71	585.33

Total	42200.50	42156.17	42172.85	42172.83	42171.42	42157.91	42162.12	42152.55
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Riegel	42156.17
Dausman	42157.91
Wickiser	42162.12
Conway	42171.42
Lacroix	42172.83
Rogers	42172.85
Melanson	42200.50

Median measurement



In group measurements, the median measurement may be taken to lie close to the best value. Bernie Conway had the median measurement of 42171.42 metres.

In order to bring the course to full length, 23.58 metres will be added to the course at the start.

LOCATIONS OF SPLITS BY BERNIE CONWAY'S MEASUREMENT

Includes an addition of 23.58 metres at the start

	Unad-justed Calculated interval metres	Unad-justed Cumulative Length metres	Cumula-tive length after 23.58 Start Adjust metres	Desired Length metres	Split Adjust metres
Start		0	0		
Mile 5	8029.76	8029.76	8053.34	8046.72	-6.62
Mile 15	7346.75	15376.51			
Mile 10	694.82	16071.33	16094.92	16093.44	-1.48
Mile 25	6654.45	22725.78			
Mile 20	694.04	23419.82			
Mile 15	692.99	24112.82	24136.40	24140.16	3.76
Mile 10	694.82	24807.64			
Mile 25	6654.45	31462.09			
Mile 20	694.04	32156.13	32179.71	32186.88	7.17
Mile 15	692.99	32849.12			
Mile 10	694.82	33543.94			
Mile 25	6654.45	40198.39	40221.98	40233.6	11.62
Mile 20	694.04	40892.43			
Mile 15	692.99	41585.42			
Finish	585.99	42171.42	42195.00	42195	0.00

SUMMARY OF ADJUSTMENTS TO BE MADE TO THE COURSE

A positive value means the point must be moved forward, in the direction of running
 A negative value indicates the point must be moved back, opposite the direction of running.

	Adjust-ment Metres	Adjust-ment Feet	
Start	-23.6	-77	split moves back
Mile 5	-6.6	-22	split moves back
Mile 10	-1.5	-5	split moves back
Mile 15	3.8	12	split moves forward
Mile 20	7.2	24	split moves forward
Mile 25	11.6	38	split moves forward
Finish	0.0	0	unchanged

All of the adjustments were made. Then, to accommodate the needs of the chip timing equipment, all measured points were moved 23 feet toward the start
 The resultant course was certified as AL 03001 DL.

Because the elevation drop exceeded 1 m/km, it was decided to relocate the start line at a location at lower elevation. The following report documents the validation of that course.

PREVALIDATION OF REVISED COURSE - NOVEMBER 9, 2003

The start was relocated to reduce total drop.

The first 5 miles were remeasured.

Rick Melanson did some preliminary rides, and determined a probable location for the revised start location.

All calculations use average constant and include 1.001 short course prevention factor.

Calibration was done on Willow Lane 300 m.

Precal - 6:50 AM - dry, clear, 50F

Pete Riegel 69770				Rick Melanson 265218			
73274	3504	3507.75	average	268625.5	3407.5	3407.75	average
76786	3512	11.70419	Cts/metre	272034.5	3409	11.37053	Cts/metre
80290	3504			275441	3406.5		
83801	3511			278849	3408		

Postcal - 8:10 AM - dry, clear, 55F

Pete 16510				Rick 402658			
20015	3505	3508.5	average	406066	3408	3408.75	average
23526.5	3511.5	11.7067	Cts/metre	409476	3410	11.37386	Cts/metre
27032.5	3506			412884	3408		
30544	3511.5			416293	3409		

Day's constant (average) =

11.70544

11.37219

Measurements

	Pete Counter Reading	Pete Interval Counts	Pete Interval Metres
Expansion joint, center of driveway to Roebuck YMCA	14840		
Wooden telephone pole, NW corner 65th St & 1st Ave. N.	109154	94314	8057.277

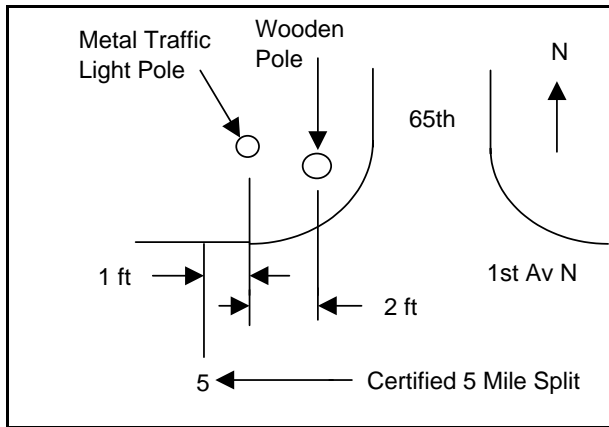
	Rick Counter Reading	Rick Interval Counts	Rick Interval Metres
	309088		
	400746	91658	8059.834

Agreement =

0.000317 OK

Official distance =

8057.277 metres
5.00656 Miles
5 miles + 34.63507 feet (use 5 miles + 35 ft)



Intersection of 65th and 1st Ave N

The wooden telephone pole at the NW corner of 65th St and 1st Ave N is 3 feet east of the certified and validated location of the 5 mile split.

Therefore the measured distance to the 5 mile point becomes 5 miles plus 38 feet.

The final start location is thus 38 feet west of the expansion joint at the center of the driveway to Roebuck YMCA.

All other portions of the course remain unchanged from AL 03001 DL

