



The Athletics Congress of the USA

*The Governing Body for Athletics in the United States
including Track and Field, Long Distance
Running and Race Walking for
men and women and boys and girls
at all age levels.*

SALLY H. NICOLL
Ragged Mountain Club
Potter Place, New Hampshire 03265
(603) 735-5721

September 19, 1991

TO: Peter S. Riegel, Chairman, Road Running Technical Committee
3354 Kirkham Road, Columbus, Ohio 43221

SUMMARY REPORT - WOMEN'S TEAM MEASUREMENT OF THE HOUSTON TENNECO
MARATHON FOR WOMEN'S 1992 OLYMPIC TRIALS

Attached you will find copies of all data collected during the measurement verification of the Houston Tenneco Marathon course. It was my very great pleasure to serve as leader of this team and to submit the following report. It is intended to summarize our activities for you and to provide some additional details not covered by the attachments.

Tom and Mary Anne McBrayer served our hosts and made all the local arrangements for our visit to Houston. Both Tom and Mary Anne serve on the Marathon Committee, Tom is the current course measurer and Mary Anne is coordinator for the qualified athletes. The Marathon Committee and Race Director David Hannah agreed to provide in-town costs for the measurement to include meals and hotel accommodations, local transportation, police and medic support, recorders during course work, and the bicycles.

The selected riders were RRTC National Certifiers Amy Morss (NY) and Elizabeth Longton (TN) joined by Pittsburgh '88 veterans Betsy Hughes (FL) and Carole Langenbach (WA). Carol McLatchie, TAC Athletes Advisory member of RRTC also joined the Team for the ride. Carol's participation was significant step forward as a Trials Qualified athlete shared the work of the technicians within the sport. Carol gained the Team members respect and devotion for her efforts. She added a very special perspective to both the work and pursuant conversations.

The measurement took place on the weekend of September 13 - 15, 1991. This date was chosen as it coincided with the annual Marathon Kickoff celebration. During the weekend the people's marathon held early sign-up and by Monday over 1000 early registrations had been accepted for the January 26, 1992 event.

The Measurement Team arrived on Friday afternoon. Members were met at the various airports by the McBrayers. We assembled at The Four Seasons, our host hotel, where splendid accommodations and service were provided. The evening meal was graciously hosted at the home of the McBrayers where we were joined by David Hannah, Race Director, and special guest Al Becken, former RRCA Southern Region Director, who happened to be in town on business. Mary Anne served a delicious meal and introduced us to Bluebonnet Ice Cream (fearfully addictive). Following the meal, Tom reviewed the agenda for the weekend and presented us with T shirts

designed especially for the occasion. The warm welcome introduced us quickly to Texas hospitality.

On Saturday morning Mary Anne took us to Butera's on Montrose, a local restaurant, where we enjoyed a delicious breakfast. Next stop was Boone's Cycles for a careful and expert fitting to the bicycles which had been selected according to our requests. During the fittings we were joined by running columnist Gwen Lewis, the photographer from a local newspaper, and the McBrayer's daughter Carol, our official photographer. Jones Counters were carefully installed and when all bicycles were completely adjusted the Team tested them on a ride back to the hotel.

Next on the agenda was a tour of the course in a van rented especially for our stay. We were first shown the calibration course located in front of the George Brown Convention Center adjacent to the start lines, then we drove over the course. Tom shared details of his measurement and explained areas where we would have to follow special instructions. In accord with police requests we agreed to ride in the direction of traffic. This would involve riding one segment separately. We visited that site as well as the dual starts and merge point. The balance of the afternoon was free time and rest in preparation for the 2 AM calibration.

The McBrayers called for us at 5:40 PM for Saturday evening dinner at the XIT in River Oaks Shopping Center. We were joined there by Pete League (Marathon Founder), Pete's wife Lynn, and Carol and Jim McLatchie. We enjoyed good fellowship and tasty meals featuring local specialities. I was especially pleased to meet Pete League. He was the measurer of the Elby's course in Wheeling, West Virginia, validated in 1990 by Mike Wickiser. Pete has since moved from that area back to Houston.

A few hours of rest and it was measurement time. The group assembled at the George Brown Convention Center calibration course where we were met by the support crew which included the police escort, the Course Coordinator, an EMT Team, recorders Pete League and Will Vanderbrink, and Michael Fred with a supply van. (Michael was director of the '91 Bear Creek Loop 50 Mile recently validated by Felix Cichocki). Tom McBrayer and Carol McLatchie joined the bicyclists with Mary Anne McBrayer and I completing the group. Ride order was confirmed as Amy, Elizabeth, Betsy, Carole and Carol with Tom serving as a guide. Radios were mounted on Tom and Amy's bicycles to provide on-course communication and guidance during the rides. Four calibration rides were made with Will and Pete recording on one end and Mary Anne and I on the other. Start time was 2:25 AM with a temperature of 78 degrees F.

We first rode the predetermined segment from the finish point to a reference point at the Shepherd Bridge to accommodate the request we stay with the flow of traffic. The bicycles were then transported back

to the Crawford start line on a truck rigged with racks our hosts designed to transport six bicycles. The course was negotiated from Crawford to the Shepherd Bridge point (approximately 23 miles) with a break at the 15 mile point where we enjoyed the hospitality of the police station. During the measurement, support vehicles blocked intersections and closed lanes to insure a secure ride.

The Crawford (Trials course) course ride was completed when we arrived back at the Shepherd Bridge reference point. During that ride at the section from the merge to the 5K point the riders had been required to use the right lanes rather than the SPR. Although there had been some off-setting the Team members were not comfortable with that portion of the ride. The bicycles were transported back to the 5K point. It was decided to ride from the 5K point back to the LaBranche start line using the SPR from the 5K to the merge and to substitute those figures in the earlier data. This completed the course riding and we returned the bicycles by truck to the George Brown Convention Center and recalibrated. The temperature remained at 78 degrees throughout the measurement and riding was completed shortly after 7 AM (approximately 5 hours total measurement time).

Following a short break, we gathered at Pete League's home for a delicious home cooked breakfast, wonderful Texas hospitality and good fellowship. Tom and Mary Anne presented special plaques to the Team members. They are the first items to display the 1992 Women's Trials logo and we felt especially honored to receive them. Next came the serious calculating time. After the first set of potential findings were determined it was obvious a problem existed. Our very consistent data showed the course to be unreasonably overlength. Checks and double checks only served to confirm the calculations. This pointed to an immediate need to remeasure the calibration course. Scheduled departure times did not allow members of the Team to do this and we had to leave the problem with Tom McBrayer for solution. In retrospect we realize we should have accomplished a calibration course check on Saturday afternoon and will certainly do so in any future remeasurement activity. Though it temporarily placed a damper on an otherwise perfect weekend by leaving the question of course length unanswered, we did know it was "at least the marathon distance". Tom's measurement of the calibration course was originally reported to us as 309.93 meters but proved on remeasurement to be 307.857 meters. The data reflecting the revisions is attached. Tom had predicted we would find overage. It is consistent with his own original measurement data.

The completion of this project represents another significant advance in the technical role of women in the sport. In 1988 the Team activity was a first. For the '92 Trials we not only have women doing the work, but this time the riders included two women certifiers both of whom

are very active Final Signatories. Additionally we had a qualified woman athlete joining the ride for a mutual sharing of experiences and roles in the sport. That is a first!

Heartfelt thanks are extended to everyone who made this possible: Team members Amy Morss, Elizabeth Longton, Betsy Hughes, Carole Langenbach and athlete Carol Mc Latchie, our in-town sponsors Tom and Mary Anne McBrayer, The Houston Tenneco Marathon Committee represented by David Hannah (Director) with Pete, Mac, Michael, and Will, the Houston police, the EMT's, Joy Boone, Lynn League, and several others. Last but not least, our grateful thanks to Pete Riegel without whose encouragement and support our goals would not have been realized.

Respectively submitted,

Sally H. Nicoll
Sally H. Nicoll, Team Leader
Validations Chairman, RRTC



Women's Olympic Trials Marathon Measurement Team assembled outside Boone's bicycle shop - l-r: Betsy Hughes, Sally Nicoll, Amy Morss, Tom McBrayer, Elizabeth Longton, Mary Anne McBrayer, Carole Langenbach

WOMEN'S OLYMPIC TRIALS MARATHON MEASUREMENT

HOUSTON, TEXAS - SEPTEMBER 15, 1991

ALL CALCULATIONS USE AVERAGE CONSTANT WITHOUT 1.001

CALIBRATION DATA

CALIBRATION COURSE LENGTH = 307.857 METERS

	ELIZABETH LONGTON		AMY MORSS		BETSY HUGHES		CAROLE LANGENBACH	
PRECAL	78687		70600		37700		23695	
	81583	2896	73695.5	3095.5	40763.5	3063.5	26591	2896
	84478	2895	76792	3096.5	43828	3064.5	29486	2895
	87373.5	2895.5	79888.5	3096.5	46893.5	3065.5	32381.5	2895.5
	90269.5	2896	82985	3096.5	49957.5	3064	35277.5	2896
AVG		2895.625		3096.25		3064.375		2895.625
CTS/KM		9405.746		10057.42		9953.890		9405.746
CTS/M		9.405746		10.05742		9.953890		9.405746
POSTCAL	39870		67320		26400		85790	
	42765	2895	70415	3095	29462.5	3062.5	88684.5	2894.5
	45660	2895	73509	3094	32524.5	3062	91578.5	2894
	48555	2895	76604.5	3095.5	35586.5	3062	94472.5	2894
	51450	2895	79699	3094.5	38650.5	3064	97367	2894.5
AVG		2895		3094.75		3062.625		2894.25
CTS/KM		9403.716		10052.55		9948.206		9401.280
CTS/M		9.403716		10.05255		9.948206		9.401280
DAY'S CONSTANT CTS/M		9.404731		10.05499		9.951048		9.403513

RECORDED MEASUREMENT DATA

	<u>LONGTON</u>		<u>MORSS</u>		<u>HUGHES</u>		<u>LANGENBACH</u>	
	OBSERVED COUNT	INTERVAL COUNT	OBSERVED COUNT	INTERVAL COUNT	OBSERVED COUNT	INTERVAL COUNT	OBSERVED COUNT	INTERVAL COUNT
CR START	44601		44836		8083		90165	
MERGE	79067	34466	81690	36854	44564	36481	124635	34470
5 KM	91698	12631	95199	13509	57936	13372	137248	12613
10 KM	138762	47064	145520	50321	107743	49807	184322	47074
15 KM	185862	47100	195875	50355	157585	49842	231430	47108
20 KM	232923	47061	246196	50321	207403	49818	278499	47069
HMAR	243245	10322	257234	11038	218325	10922	288819	10320
25 KM	280025	36780	296566	39332	257238	38913	325610	36791
30 KM	328072	48047	347933	51367	308086	50848	373664	48054
35 KM	374207	46135	397263	49330	356915	48829	419814	46150
MEM/SHEP	389512	15305	413626	16363	373115	16200	435126	15312
MEM SHEP	144601		144836		108083		90165	
40 KM	112829	31772	110871	33965	74455	33628	58387	31778
FINISH	92180	20649	88800	22071	52600	21855	37735	20652
START LAB	136766		64223		123265		82845	
MERGE	102298	34468	27363	36860	86781	36484	48371	34474
5 KM	89690	12608	13880	13483	73440	13341	35758	12613

CALCULATED INTERVALS

	<u>LONGTON</u>	<u>MORSS</u>	<u>HUGHES</u>	<u>LANGENBACH</u>
	INTERVAL METERS	INTERVAL METERS	INTERVAL METERS	INTERVAL METERS
CR START				
MERGE	3664.8	3665.2	3666.0	3665.7
5 KM	1343.0	1343.5	1343.8	1341.3
10 KM	5004.3	5004.6	5005.2	5006.0
15 KM	5008.1	5008.0	5008.7	5009.6
20 KM	5004.0	5004.6	5006.3	5005.5
HMAR	1097.5	1097.8	1097.6	1097.5
25 KM	3910.8	3911.7	3910.4	3912.5
30 KM	5108.8	5108.6	5109.8	5110.2
35 KM	4905.5	4906.0	4906.9	4907.7
MEM/SHEP	1627.4	1627.4	1628.0	1628.3
MEM SHEP				
40 KM	3378.3	3377.9	3379.3	3379.4
FINISH	2195.6	2195.0	2196.3	2196.2
START LAB				
MERGE	3665.0	3665.8	3666.3	3666.1
5 KM	1340.6	1340.9	1340.7	1341.3

LENGTHS OF 5 KM SPLITS

	LONGTON	MORSS	HUGHES	LANGENBACH	
	INTERVAL METERS	INTERVAL METERS	INTERVAL METERS	INTERVAL METERS	SOSS
WOM START					
5 KM	5007.8	5008.8	5009.8	5007.0	5007.0
10 KM	5004.3	5004.6	5005.2	5006.0	5004.3
15 KM	5008.1	5008.0	5008.7	5009.6	5008.0
20 KM	5004.0	5004.6	5006.3	5005.5	5004.0
25 KM	5008.3	5009.5	5008.0	5009.9	5008.0
30 KM	5108.8	5108.6	5109.8	5110.2	5108.6
35 KM	4905.5	4906.0	4906.9	4907.7	4905.5
40 KM	5005.7	5005.3	5007.3	5007.7	5005.3
FINISH	2195.6	2195.0	2196.3	2196.2	2195.0
TOTAL	42248.1	42250.3	42258.4	42259.8	

MEN START				
5 KM	5005.6	5006.8	5007.0	5007.4

MEASURED DISTANCES FROM WOMEN'S START

	LONGTON	MORSS	HUGHES	LANGENBACH			
	ELAPSED METERS	ELAPSED METERS	ELAPSED METERS	ELAPSED METERS	SOSS	DESIRED METERS	REQ'D ADJUST
WOM START							
5 KM	5007.8	5008.8	5009.8	5007.0	5007.0	5005.0	-2.0
10 KM	10012.1	10013.3	10015.0	10013.0	10011.2	10010.0	-1.2
15 KM	15020.2	15021.3	15023.7	15022.6	15019.2	15015.0	-4.2
20 KM	20024.2	20025.9	20030.0	20028.0	20023.2	20020.0	-3.2
25 KM	25032.5	25035.3	25038.1	25038.0	25031.2	25025.0	-6.2
30 KM	30141.3	30143.9	30147.9	30148.2	30139.8	30030.0	-109.8
35 KM	35046.8	35049.9	35054.8	35055.9	35045.3	35035.0	-10.3
40 KM	40052.5	40055.2	40062.1	40063.6	40050.6	40040.0	-10.6
FINISH	42248.1	42250.3	42258.4	42259.8	42245.6	42237.2	-8.4

NOTE:

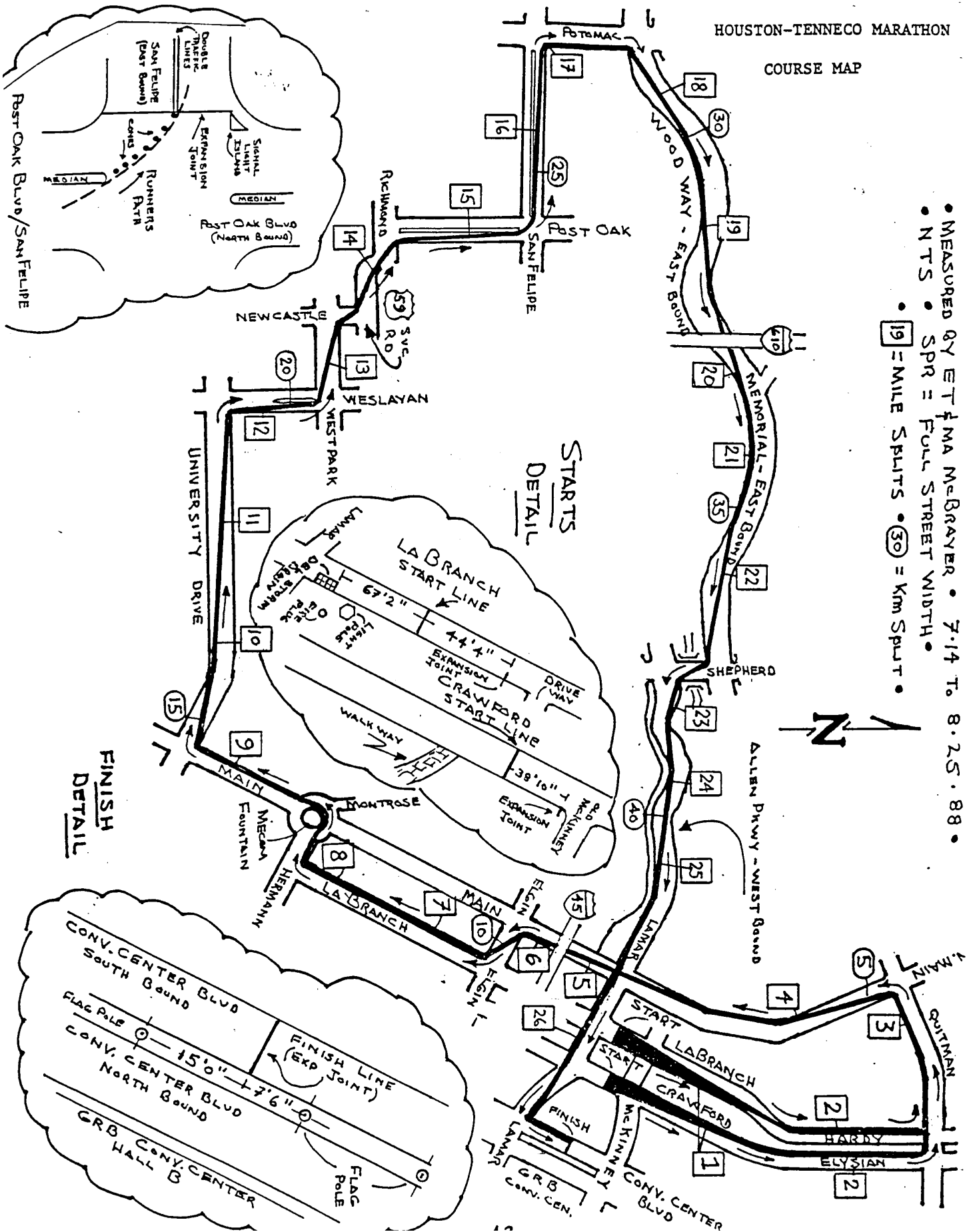
One section of the course between the merge point and the 5K mark was measured twice. After riding this part of the course and while measuring from the Crawford start, the Team was not satisfied they rode the shortest possible route. Late in the measurement when the merge to LaBranche start segment was being measured, the Team started at the 5K point and rode the 5K to merge segment a second time. Three of the riders had lower distances recorded of about 2 meters each. If the lower figures were substituted for the original merge to 5K data, the course length would be about 2 meters shorter in the data of three of the riders.

The data reveals a layout discrepancy in the location of the 30K mark. The point should be located about 100 meters before its recorded point.

HOUSTON-TENNECO MARATHON

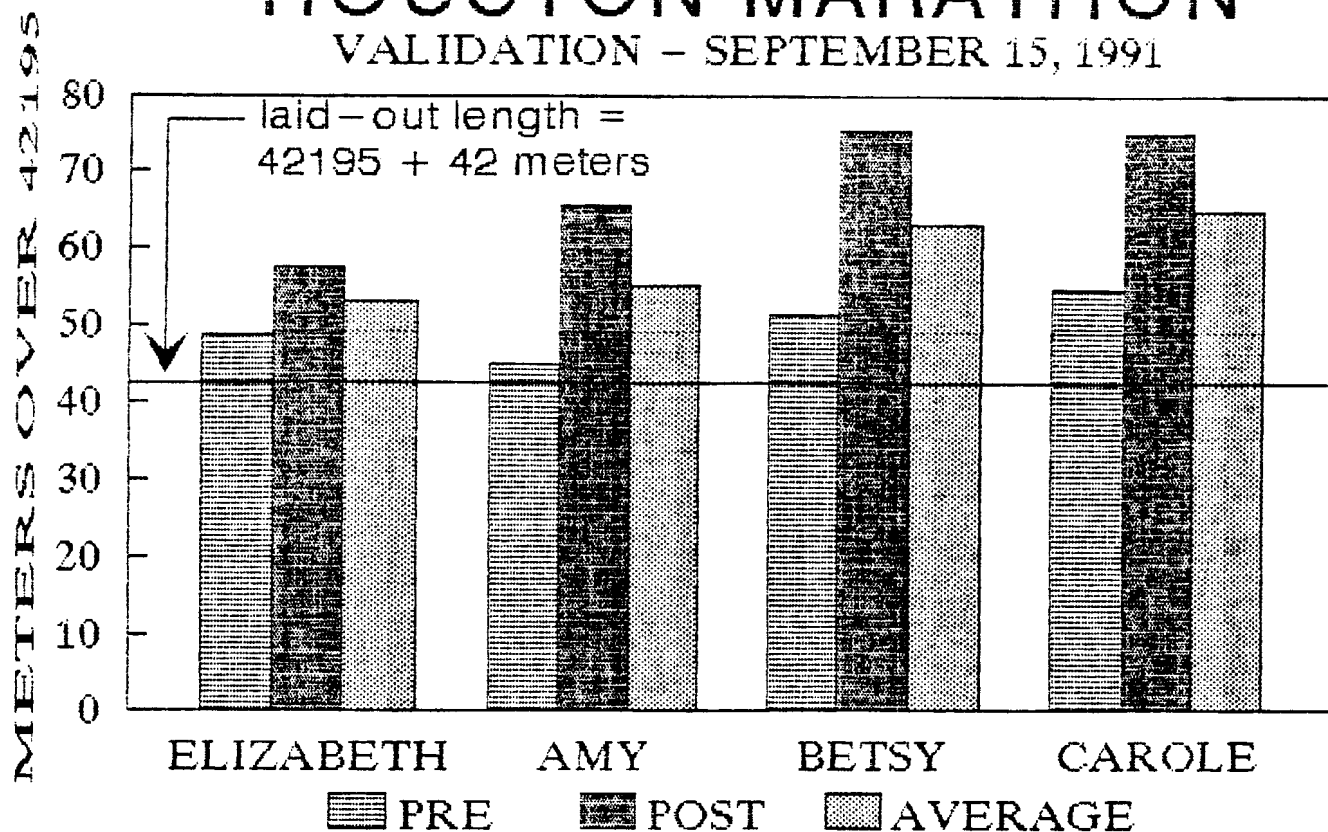
COURSE MAP

- MEASURED BY ET & MA McBRAYER • 7.14 TO 8.25.88 •
- NTS • SPR = FULL STREET WIDTH •
- 19 = MILE SPLITS • 30 = KM SPLIT •



HOUSTON MARATHON

VALIDATION - SEPTEMBER 15, 1991



COLUMBUS MARATHON

VALIDATION - OCTOBER 5, 1991

