

Bush & Associates Inc.

Land Surveyors

Certificate of Accuracy

Statement of Survey & Measurement

PROJECT

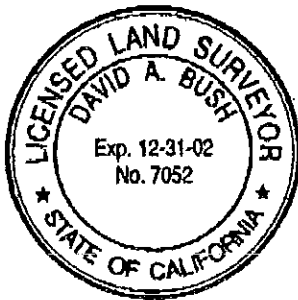
Orange Coast College Running Track

Bush and Associates, Inc. certifies that the running track at Orange Coast College is in compliance with the rules and regulations as set forth by the NCAA and Washington Track and Field Association for a standard 400 meter running track.

David A. Bush

Date 5-30-01

David A. Bush
President



CONTRACTOR NAME :
 FACILITY NAME :
 LOCATION :
 CALCULATED BY :
 DATE CALCULATED :
 ATLAS TRACK & TENNIS
 ORANGE COAST COLLEGE
 COSTA MESA, CALIFORNIA
 KENNETH W. SCHMIDT JR.
 16-May 2001

TRACK DIMENSIONS - INPUT
 =====

A. DISTANCE BETWEEN HUBS	323.180	FEET	=====	98.505	METERS	=====	INPUT
B. MEASURING LINE RADIUS	105.993	CALC		32.307	CALC		INPUT
C. LENGTH OF TRACK	1,312.33	CALC		400.000	INPUT		INPUT
D. LANE WIDTH	3.50	CALC		1.067	INPUT		INPUT
E. CONVERSION FACTOR FT/MT	3.280833	INPUT		1.000	CALC		CALC
F. ANGLES CW=180/200, CCW=0	0.00	INPUT		NA	NA		NA
G. DEGREE/GRAD 180/200	180.00	INPUT		NA	NA		NA
H. LANE 1 8/12 INCH, 20/30 CM	0.98	CALC		0.300	INPUT		INPUT
I. LANE 2-10 8 INCH, 20 CM	0.66	CALC		0.200	INPUT		INPUT
J. STEEPLE 8/12 INCH, 20/30 CM	0.66	CALC		0.200	INPUT		INPUT
K. STRGT/CURVE CUT LINE 1,-1	-1	INPUT		NA	NA		NA
L. STRGT/CURVE RADIUS	323.18	CALC		98.505	INPUT		INPUT
M1. FINISH PC #1 > 400M & ALL	0.00	CALC		0.000	INPUT		INPUT
M2. FINISH PC #1 FOR STRAIGHT	0.00	CALC		0.000	INPUT		INPUT
M3. FINISH PC #3 FOR STRAIGHT	0.00	CALC		0.000	INPUT		INPUT
M4. FINISH PC #1 200M TO 350M	0.00	CALC		0.000	INPUT		INPUT
N. 800 METER RUN 1 TO 4 TURN	1	INPUT		NA	NA		NA
O. 800 METER RELAY 1 TO 4 TURN	4	INPUT		NA	NA		NA
P. 1600 METER RELAY 1 TO 4 TURN	3	INPUT		NA	NA		NA
Q. WATERFALL FALL START RADIUS	117.50	CALC		35.815	INPUT		INPUT
R. R.PT. OFFSET (-IN, +OUT)	(28.39)	CALC		-8.654	INPUT		INPUT
S. INSIDE RADIUS(CURB OR LINE)	105.99	CALC		32.307	INPUT		INPUT
T. WATER JUMP ANGLE AT R.PT.34	146.1045	INPUT		46.356	CALC		CALC
U. LONG TRACK OPTION 1,2,3	1	INPUT		NA	NA		NA
V. CALC. LENGTH OF TRACK	1,312.33	CALC		400.000	CALC		CALC
W. 1 TURN CORRECT. FACTOR	10.9955	CALC		3.351	CALC		CALC

CUTLINE
 ADJUST
 Y=1,NE=0
 1
 1
 1
 566.532 PC #1 TO WATER JUMP
 1304.478 STEEPLECHASE TRACK LENGTH
 397.606 METERS

TRACK DIMENSIONS - CALC.
 =====

LANE LINE RADIUS (OUTSIDE EDGE)	105.01	FEET	=====	32.007	METERS	=====	0.01
	108.51			33.074			FEET
	112.01			34.140			=====
	115.51			35.207			0.00
	119.01			36.274			0.00
	122.51			37.341			0.00
	126.01			38.408			0.00
	129.51			39.474			0.00
	133.01			40.541			0.00
	136.51			41.608			0.00
	140.01			42.675			0.00
TRACK DIMENSIONS - CALC.	105.99	FEET	=====	32.307	METERS	=====	0.10
MEASURE LINE RADIUS	109.16			33.274			FEET
	112.66			34.340			=====
	116.16			35.407			0.03
	119.66			36.474			0.03
	123.16			37.541			0.03
	126.66			38.608			0.03
	130.16			39.674			0.02
	133.66			40.741			0.02
	137.16			41.808			0.02

DEG. MIN/SEC AROUND CURVE AT X FEET

EVENT	COLOR	LANE 1	LANE 2	LANE 3	LANE 4	LANE 5	LANE 6	LANE 7	LANE 8	LANE 9	LANE 10
PAGE #3 DISTANCE FROM PC #2 TOWARDS PC #3											
200M DASH											
1 TURN STAG STAR	WHITE	323.18	NA	NA	NA	NA	NA	NA	NA	NA	NA
200M HURDLES											
1 TURN STAG STAR	YELLOW	323.18	NA	NA	NA	NA	NA	NA	NA	NA	NA
1ST HURDLE	YELLOW	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2ND HURDLE	YELLOW	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
250M MARK											
1 TURN STAG STAR	YELLOW	159.14	169.10	180.10	191.09	202.09	213.09	224.08	235.08	246.07	257.07
300M HURDLES											
1 TURN STAG STAR	WHITE	(4.90)	5.06	16.06	27.05	38.05	49.04	60.04	71.03	82.03	93.03
1ST HURDLE	RED	142.73	152.70	163.69	174.69	185.69	196.68	207.68	218.67	229.67	240.66
2ND HURDLE	RED	257.56	267.53	278.52	289.52	300.51	311.51	322.51	NA	NA	NA
3RD HURDLE	RED	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4TH HURDLE	RED	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
400M HURDLES											
2ND HURDLE	YELLOW	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3RD HURDLE	YELLOW	44.31	54.27	65.27	76.27	87.26	98.26	109.25	120.25	131.24	142.24
4TH HURDLE	YELLOW	159.14	169.10	180.10	191.09	202.09	213.09	224.08	235.08	246.07	257.07
5TH HURDLE	YELLOW	273.97	283.93	294.93	305.92	316.92	NA	NA	NA	NA	NA
6TH HURDLE	YELLOW	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
400M RELAY											
EXCHANGE #1											
BEGIN ACCEL ZONE	YELLOW	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BEGIN EXC ZONE	YELLOW	NA	NA	NA	NA	NA	NA	NA	5.42	16.41	27.41
MID PT OF ZONE	YELLOW	NA	NA	NA	NA	5.24	16.24	27.23	38.23	49.22	60.22
END EXC ZONE	YELLOW	27.90	37.87	48.87	59.86	70.86	81.85	92.85	103.84	114.84	125.83
EXCHANGE #2											
BEGIN ACCEL ZONE	YELLOW	257.56	267.53	278.52	289.52	300.51	311.51	322.51	NA	NA	NA
BEGIN EXC ZONE	YELLOW	290.37	300.34	311.33	322.33	NA	NA	NA	NA	NA	NA
MID PT OF ZONE	YELLOW	323.18	NA	NA	NA	NA	NA	NA	NA	NA	NA
END EXC ZONE	YELLOW	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
800M RELAY											
EXCHANGE #1											
BEGIN ACCEL ZONE	GREEN	257.56	287.45	320.44	NA	NA	NA	NA	NA	NA	NA
BEGIN EXC ZONE	GREEN	290.37	320.27	NA	NA	NA	NA	NA	NA	NA	NA
MID PT OF ZONE	GREEN	323.18	NA	NA	NA	NA	NA	NA	NA	NA	NA
END EXC ZONE	GREEN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EXCHANGE #3											
BEGIN ACCEL ZONE	GREEN	257.56	267.53	278.52	289.52	300.51	311.51	322.51	NA	NA	NA
BEGIN EXC ZONE	GREEN	290.37	300.34	311.33	322.33	NA	NA	NA	NA	NA	NA
MID PT OF ZONE	GREEN	323.18	NA	NA	NA	NA	NA	NA	NA	NA	NA
END EXC ZONE	GREEN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WATER FALL STARTS											
1.500M	WHITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3.000M	WHITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5.000M	WHITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

CURVED CUT LINE MEASUREMENTS ALONG LINE SIDE OF LANE LINE - IF VALUE IS ZERO STRAIGHT CUTLINE IS USED											
DISTANCE @ LINE											
DISTANCE @ 1/3 PT	0.00	0.01	0.06	0.15	0.28	0.44	0.64	0.88	1.16	1.48	
DISTANCE @ 2/3 PT	0.00	0.02	0.09	0.19	0.33	0.50	0.72	0.97	1.26	1.59	
DISTANCE @ 2/3 PT	0.01	0.04	0.12	0.23	0.38	0.57	0.80	1.06	1.37	1.71	

EVENT	COLOR	LANE 1	LANE 2	LANE 3	LANE 4	LANE 5	LANE 6	LANE 7	LANE 8	LANE 9	LANE 10
PAGE #6 DISTANCE FROM PC #4 TOWARDS PC #1											
ING/EVENT											
150 METER DASH											
START		159.14									
1ST HURDLE		142.73	126.33	77.12	77.12	60.71	(4.90)	(4.90)			
2ND HURDLE		185.38	161.76	119.77	122.12	100.08		37.75	10 HURDLE		
3RD HURDLE		213.27	192.76	147.66	152.12	126.33		65.63	9 HURDLE		
4TH HURDLE		241.16	203.76	175.54	182.12	152.58		93.52	8 HURDLE		
5TH HURDLE		269.05	224.75	203.43	212.12	178.82		121.41	7 HURDLE		
6TH HURDLE		296.93	245.75	231.32	242.12	205.07		149.30	6 HURDLE		
7TH HURDLE			266.75	259.20	272.12	231.32		177.18	5 HURDLE		
8TH HURDLE			287.75	287.09		257.56		205.07	4 HURDLE		
9TH HURDLE						283.81		232.96	3 HURDLE		
10TH HURDLE								260.84	2 HURDLE		
FINISH		323.18	323.18	323.18	323.18	323.18	323.18	288.73	1 HURDLE		
ING/EVENT								323.18	323.18		
110 METE HURDLES											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5TH HURDLE		127.25	98.18								
6TH HURDLE		157.24	128.18								
7TH HURDLE		187.22	158.18								
8TH HURDLE		217.21	188.18								
9TH HURDLE		247.20	218.18								
10TH HURDLE		277.18	248.18								
FINISH		323.18	278.18								
ING/EVENT											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5TH HURDLE		127.25	98.18								
6TH HURDLE		157.24	128.18								
7TH HURDLE		187.22	158.18								
8TH HURDLE		217.21	188.18								
9TH HURDLE		247.20	218.18								
10TH HURDLE		277.18	248.18								
FINISH		323.18	280.53								
ING/EVENT											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5TH HURDLE		127.25	98.18								
6TH HURDLE		157.24	128.18								
7TH HURDLE		187.22	158.18								
8TH HURDLE		217.21	188.18								
9TH HURDLE		247.20	218.18								
10TH HURDLE		277.18	248.18								
FINISH		323.18	280.53								
ING/EVENT											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5TH HURDLE		127.25	98.18								
6TH HURDLE		157.24	128.18								
7TH HURDLE		187.22	158.18								
8TH HURDLE		217.21	188.18								
9TH HURDLE		247.20	218.18								
10TH HURDLE		277.18	248.18								
FINISH		323.18	280.53								
ING/EVENT											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5TH HURDLE		127.25	98.18								
6TH HURDLE		157.24	128.18								
7TH HURDLE		187.22	158.18								
8TH HURDLE		217.21	188.18								
9TH HURDLE		247.20	218.18								
10TH HURDLE		277.18	248.18								
FINISH		323.18	280.53								
ING/EVENT											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5TH HURDLE		127.25	98.18								
6TH HURDLE		157.24	128.18								
7TH HURDLE		187.22	158.18								
8TH HURDLE		217.21	188.18								
9TH HURDLE		247.20	218.18								
10TH HURDLE		277.18	248.18								
FINISH		323.18	280.53								
ING/EVENT											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5TH HURDLE		127.25	98.18								
6TH HURDLE		157.24	128.18								
7TH HURDLE		187.22	158.18								
8TH HURDLE		217.21	188.18								
9TH HURDLE		247.20	218.18								
10TH HURDLE		277.18	248.18								
FINISH		323.18	280.53								
ING/EVENT											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5TH HURDLE		127.25	98.18								
6TH HURDLE		157.24	128.18								
7TH HURDLE		187.22	158.18								
8TH HURDLE		217.21	188.18								
9TH HURDLE		247.20	218.18								
10TH HURDLE		277.18	248.18								
FINISH		323.18	280.53								
ING/EVENT											
110 METER HURDLES											
ACKWARDS											
START		(37.71)									
1ST HURDLE		7.30	(38.70)								
2ND HURDLE		37.29	8.18								
3RD HURDLE		67.27	38.18								
4TH HURDLE		97.26	68.18								
5											

EVENT COLOR LANE 1 LANE 2 LANE 3 LANE 4 LANE 5 LANE 6 LANE 7 LANE 8 LANE 9 LANE 10
 PAGE #9 DISTANCE FROM PC #1 TOWARDS PC #4 -- CONTINUED

EVENT	COLOR	LANE 1	LANE 2	LANE 3	LANE 4	LANE 5	LANE 6	LANE 7	LANE 8	LANE 9	LANE 10
800M RUN											
1 TURN STAG STAR	YELLOW	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
800M RELAY											
4 TURN STAG STAR	YELLOW	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
EXCHANGE #2											
BEGIN ACCEL ZONE	GREEN	65.62	45.69	23.70	1.70	NA	NA	NA	NA	NA	NA
BEGIN EXC ZONE	GREEN	32.81	12.88	NA	NA	NA	NA	NA	NA	NA	NA
MID PT OF ZONE	GREEN	(0.00)	NA	NA	NA	NA	NA	NA	NA	NA	NA
END EXC ZONE	GREEN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FINISH	WHITE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1600M RELAY											
1 TURN STAG STAR	YELLOW	(0.00)	NA	NA	NA	NA	NA	NA	NA	NA	NA
3 TURN STAG STAR	YELLOW	(0.00)	NA	NA	NA	NA	NA	NA	NA	NA	NA
EXCHANGE #1											
BEGIN EXC ZONE	BLUE	32.81	22.83	11.78	0.69	NA	NA	NA	NA	NA	NA
MID PT OF ZONE	BLUE	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
END EXC ZONE	BLUE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EXCHANGE #2											
BEGIN EXC ZONE	BLUE	32.81	32.81	32.81	32.81	32.81	32.81	32.81	32.81	32.81	32.81
MID PT OF ZONE	BLUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
END EXC ZONE	BLUE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EXCHANGE #3											
BEGIN EXC ZONE	BLUE	32.81	32.81	32.81	32.81	32.81	32.81	32.81	32.81	32.81	32.81
MID PT OF ZONE	BLUE	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
END EXC ZONE	BLUE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FINISH	WHITE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WATER FALL STARTS											
1,600M	WHITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,200M	WHITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10,000M	WHITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORANGE COAST COLLEGE											
DIST IN LANE - 1 LAP IN FEET		1,312.33	1,332.26	1,354.25	1,376.25	1,398.24	1,420.23	1,442.22	1,464.21	1,486.20	1,508.19
DIST IN LANE - 1 LAP IN METERS		400.000	406.075	412.778	419.480	426.183	432.886	439.589	446.292	452.995	459.698
DIST IN LANE - 1 LAP IN YARDS		437.44	444.09	451.42	458.75	466.08	473.41	480.74	488.07	495.40	502.73
STEEPLECHASE MARKING											
DIST FROM 4 TO 1		NA	164.3635	NA	NA	NA	MARK DIST	1007.82	NA	NA	NA
DIST FROM 4 TO 2		283.90	NA	NA	NA	NA	MARK DIST	39.28	NA	NA	NA
DIST FROM 4 TO 3		NA	NA	268.19	54.99	NA	MARK DIST	711.16	NA	NA	NA
DIST FROM 4 TO 4		278.44	NA	NA	NA	NA	MARK DIST	44.74	NA	NA	NA
DIST FROM 3 TO 2		NA	116.5043	NA	NA	NA	MARK DIST	1088.32	NA	NA	NA
DIST FROM 3 TO 1		NA	NA	144.06	179.12	NA	MARK DIST	827.43	NA	NA	NA
DIST FROM 2 TO 3		NA	NA	NA	NA	46.3555	MARK DIST	566.53	NA	NA	NA
DIST FROM 2 TO 2		305.64	NA	NA	NA	NA	MARK DIST	305.64	NA	NA	NA
DIST FROM 2 TO 1		0.00	NA	NA	NA	NA	MARK DIST	305.64	NA	NA	NA

ANGLE 1/2 DEG.MINSE
 ANGLE 3/4A DEG.MINSE
 DISTANCE FROM 4TH HURDLE TO FINISH IS
 CHECK FINISH DIST. OK
 TO 4TH HURDLE
 FEET ALLOWED
 FEET