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March 5, 2020

Taylor Wilson  
Program Supervisor  
Arizona Disabled Sports  
59 E. Broadway Road  
Mesa, Arizona 85210

**Dear Ms. Wilson,**

Per your request, we performed a survey of the track at Brimhall Field at Mesa Westwood High School on February 5, 2020. Based on previous survey work we performed at Red Mountain High School in 2010 and Mesa Community College in 2012, we tried to follow the World Athletics (IAAF) certification form, with the main interest being the overall length of the track.

Based on information provided by Mike Wickham with General Acrylics, the track was striped in 2018 to conform with the National Federation of State High School Associations (NFHS) striping requirements.

In the field, we found both iron pins used as radius points and 3 of the 4 nails used to stripe the track. Based on field conditions and research, it appears that the following plan dimensions were intended, with the actual field conditions shown for comparison:

Plan radius:	32.414m	Actual radii:	32.426m, 32.433m
Plan straight:	97.541m	Actual straights:	97.509m, 97.514m

These design dimensions would produce a track that is exactly **400.000 meters** long when measured at **0.20 meters** from the outside edge of the inside line of Lane 1 as specified in the IAAF requirements. Because of the variations in both the radii and straights from the plan, the calculated length of the track is **400.084 meters** at the 0.20 meter offset line.

It should be noted that no kerb exists on this particular track, and as shown above, the dimensioning occurs at 0.20 meters from the outside edge of the inner lane and not 0.30 meters from a kerb. All dimensioning shown on the attached report used the **0.20 meter standard offset from the outside of the inside stripe for all lanes**, including Lane 1.

I have included a recent field certification of our instrument and Pages 1 through 15 of the World Athletics (IAAF) form for your reference. Please let me know if we can be of further assistance.

Sincerely,

**Daniel G. Francetic, RLS**  
Survey Manager  
(602) 889-4452  
[dfrancetic@entellus.com](mailto:dfrancetic@entellus.com)





# CERTIFICATION SYSTEM

## Track and Field Facilities Measurement Report Outdoor Facilities

This form must be sent to: [technicalofficer@worldathletics.org](mailto:technicalofficer@worldathletics.org)

This Measurement Report (less than two years old at the time of the submission) shall be sent with an application for:

### CLASS 1 CERTIFICATE:

*A full certificate covering all technical aspects of the facility.*

*It requires a full **Measurement Report** in accordance with the requirements of World Athletics and a **Report of Synthetic Surface Field Test** (full in-situ testing) by an Accredited Laboratory.*

### CLASS 2 CERTIFICATE:

*It requires a full **Measurement Report** and a current valid **Product Certificate** for the facility synthetic surfacing material.*

### CONFIRMATION OF COMPLIANCE:

*It requires the respective parts of the **Measurement Report** and the description of the reasons why the full certification cannot be applied for.*

**Note: The technical requirements listed in the Track and Field Facilities Manual ("Manual") also need to be met for the facility to be fit for the purpose.**

FACILITY	
Country	United States of America
City*	Mesa
Name of the Facility / Stadium*	Brimhall Field @ Westwood High School
Address	945 W Rio Salado Pkwy
Postal (ZIP) code	85201
State or Province	Arizona
GPS Coordinates (Finish Line)**	N 33°25'42.61" W 111°50'48.29" Elev = 349.42m

\* As it will appear on the Certificate.

\*\* Latitude and longitude in decimal degrees (DD) or in degrees, minutes, seconds (DMS). Elevation, if available.

SURVEY WORK			
Surveyor Company:	Entellus, Inc.		
Surveyor's Name:	Daniel G. Francetic, RLS		
Address:	3033 N 44 <sup>th</sup> St., Suite 250, Phoenix, AZ 85018		
Telephone:	602-244-2566	E-mail:	dfrancetic@entellus.com
Date(s) of Survey:	February 5, 2020		
Weather Conditions:	Mostly Cloudy, light winds SW 5-7 mph	Temperature:	40°-49° F

Instruments:	Theodolite:	Trimble S7	Nbr.:	37410510
	Distance Meter:	Trimble S7	Nbr.:	37410510

*The surveyor must provide and attach a Certificate of Instrument Accuracy for the instruments used in the survey, current at the time of the survey (less than one year old), that can be traced back to national and international standards of measurement.*



**General Notes:**

- For ease of distribution and handling, the report should be in Word document or pdf format. The measurements should be typed onto the form.
- Test methods are explained.
- Distances longer than 20m are to be measured by electro optical instruments.
- Angles are to be measured by theodolite.
- Levels to be provided in metres to three decimal places on separate forms.
- All the information required in this form must be determined by the surveyor, and he should not rely on any measurement work that may have been done by others.
- It is not for the surveyor or others to determine whether dispensations might be provided for any non-conformity with the Rules or the specification in the Manual. These are matters for World Athletics alone to determine.
- If there are more facilities than allowed for on the form, the same information as that requested should be provided for the extra facilities. This applies also to a back straight sprint track marked for competition.
- All measurements / calculations of length must be to the nearest mm.
- No negative tolerances are allowed in the measured distance of races.
- The surveyor must report any unusual situations, not covered specifically by this proforma, that might affect the proper and safe conduct of a competition e.g. runways or track lanes which have extreme local lateral or overall inclinations, depressions or humps, bubbling or torn synthetic surface, loose or damaged kerbing etc.

<b>GENERAL CONDITIONS</b>
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**All tracks intended for use for international competition must conform to the stringent requirements for accurate measurement contained in Rules and, more specifically, in the Track and Field Facilities Manual.**

**The Measurement Report duly filed by a fully qualified surveyor is one of the requirements to issue CLASS 1 or CLASS 2 Athletic Facility Certificate.**

**Application for an Athletic Facility Certification may be made by an agent on behalf of the track owner but should be signed by the track owner as World Athletics will require an undertaking that any changes, (relining etc.) will be immediately notified to the Office.**

**Certificates issued under this scheme will normally be valid for five years. In the event of track remarking, World Athletics shall be informed and new Measurement Report must be provided.**

**All removable competition equipment such as hurdles, steeplechase hurdles, landing mats, stop boards, throwing cages have to be inspected before a competition and are not part of this Report. The same applies to the level of the sand in the horizontal jump landing pits and the level of the water in the steeplechase water jump.**

<b>Owner of Facility / Stadium:</b>	<b>Mesa Public Schools Athletics Department</b>
<b>Address:</b>	<b>945 W Rio Salado Pkwy, Mesa, AZ 85201</b>
<b>Telephone Number:</b>	<b>480-472-4401</b>
<b>E-mail Address:</b>	<b><a href="mailto:bjpond@mpsaz.org">bjpond@mpsaz.org</a> (Brady Pond- Athletic Director)</b>
<b>Date:</b>	
<b>Signature (scanned acceptable):</b>	

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<b>A. CONSTRUCTION CATEGORY</b>
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<b>1. Competition Arena</b>
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Provide a layout drawing and/or photo of the facility in attachment. Please show a north point.

For determining the Construction Category, a single runway would normally have landing areas or Pole Vault boxes at each end or at the centre.

Based on the below information, the Construction Category will be determined during the review of the Measurement Report.

	Number Provided
400m Standard Track	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If NO, please describe:	
Number of oval lanes	8
Number of straight lanes	8
Water jump for the Steeplechase	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Inside	<input type="checkbox"/>
Outside	<input type="checkbox"/>
Runway for Long and Triple Jump	Total 2
Landing area at each end	N
Landing area at one end only	Y
Landing area at the centre	N
Facility for High Jump	Y
Facility for Pole Vault	Total 3
Landing area at each end	N
Landing area at one end only	Y
Landing area at centre	N
Facility for Shot Put	Y
Facility for Discus and Hammer Throw combined	N
Facility for Discus Throw only	Y
Facility for Hammer Throw only	Y
Facility for Javelin Throw	Y
Provision of ancillary rooms* ( <i>Manual Chapter 4</i> )	N
<i>Ancillary rooms e.g. for conditioning and physiotherapy, adequate space for athletes resting between events. Indicate the permanent ancillary spaces provided (m<sup>2</sup>).</i>	
Full facilities for spectators**	Y
<i>Indicate the number of spectators fully catered for.</i>	

<b>2. Other Facilities</b>
----------------------------

Warm-up Area Provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
If NO, is an adjacent park or playing field available?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Track of Similar Type of Surface to the Main Track	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Please describe in detail the warm-up facilities (number and length of oval / straight lanes, number of facilities for Jumps and Throws; Throwing Field separate or not):	
The track encircles a grass playing surface for american football and soccer and has significant grass and dirt areas around the outside of the track's north, east and west sides for warm-up activities.	
Provision of ancillary rooms at warm up (m <sup>2</sup> )	
<i>Ancillary rooms e.g. for conditioning and physiotherapy, adequate space for athletes resting between events.</i>	

Notes:	
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<b>TRACK EVENTS</b>
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<b>B. 400M STANDARD TRACK</b>
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<b>1. Track Description - Design Dimensions</b>
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Radius (m):		32.414
Radii if Double Bend (m):	a	N/A
	b	N/A
	c	N/A
Distance between Centre Points (m):		97.541
Length of construction (planning size) at inside border (m)		398.745
Nominal Measuring Length (length of Running Line) (m)		400.000
Inner Kerb:	Height (m):	N/A
	Width (m):	N/A
Kind of Inside Border (Kerb) (e.g. aluminium)		N/A
Number of oval lanes:		8
Sprint lanes main side:	Number:	8
	Length (m):	160
Sprint lanes second side:	Number:	N/A
	Length (m):	N/A
<i>If there are sprint lanes on the second side then levels and measurements must be provided for this additional sprint track for it to be included on the certificate.</i>		
Width of lanes (planning size) (m):		1.067
<i>The line on the right hand side of each lane, in the direction of running, is included in the measurement of the width of each lane.</i>		
Width of track (planning size) (m):		8.536
Safety Zone inside (m):		1.509
Safety Zone outside (m):		0.701
<i>If the safety zones inside and outside the track are individually less than 1 metre then the nature of the obstruction(s) should be described and photographs provided. The most obvious infield obstructions are likely to be a throwing safety cage or an inside steeplechase water jump.</i>		

Notes:	Inside obstruction is a headwall. Outside obstructions are electric post, outlet, and chain link fence. See photos.
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<b>2. Track and Runway Surface</b>
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*The current list of track surfaces with Product Certificates is available on the World Athletics website at Competitions/Technical Area/Certification System.*

Track Surface Product Name:	Spartan BS
Manufacturer:	Advanced Polymer Technology
Absolute Thickness (mm):	13
Certificate Number:	N/A
Installation Company:	General Acrylics
Address:	22222 N 22 <sup>nd</sup> Ave, Phoenix, Arizona, USA, 85027
Telephone:	(602) 569-9377
E-mail:	mwickham@generalacrylics.com
Date of Installation:	2004
Line Marking Company:	General Acrylics
Line Marker's Name:	Mike Wickham
Date(s) of Line Marking:	2018

Notes:	
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### 3. Length of the Track

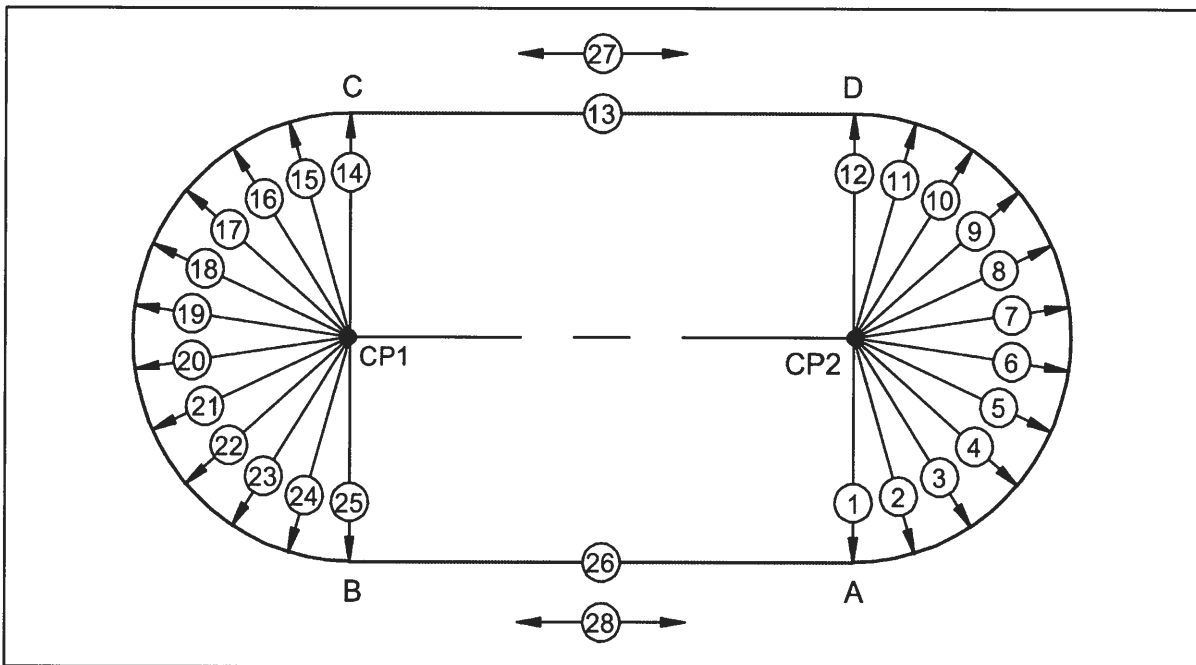
The bend average radii shall be calculated to four decimal places.

If any "D" value exceeds  $\pm 5\text{mm}$  then the lane width should be checked to ensure that it is  $1.22\text{m} \pm 0.01\text{m}$ .

For Double Bend tracks, as illustrated in the Manual, the bends are to be subdivided into the different radius sectors such that measurements for both radii are taken where the radii coincide. A record of control measurement and calculation of length for Double Bend tracks as per Manual Figure 1.2.3b can be found at the end of this document. This table should be adapted for other double bend configurations by dividing the arcs into a different number of segments so that the length of each bend arc is approximately equal.

#### 3.1. Dimensional Accuracy of the 400m Standard Track

The dimensional accuracy required for all classes of competition is measured in the 28 point control readings on the outside edge of the inner line of each lane.



Record of 28 point control measurement:

L= Measured length of radii 1-12 and 14-25

R= Desired length of radii for each lane ( $R_1, R_2, R_3, \dots$ )

S= Measured length of the straights 13 and 26 (along each lane running line)

M= Desired length of each straight: is m

D= Deviation from desired value in millimetres (L-R), (S-M)

A= Measurements 27 and 28: alignment of the straights (the difference in the length of the straight at the kerb or inside white line edge compared with the measurement at the outside edge of the outer lane)

Permitted deviation from desired value for 1-26:  $\pm 0.005\text{m}$

Permitted deviation from alignment for 27 and 28:  $\pm 0.01\text{m}$

Permitted tolerance of the running length:  $+0.040\text{m}$  max.

(Record of control measurement for Double Bend tracks see p. 27)



### 3.2 Calculation of the Length (Inside Border)

#### Length:

The bend lengths and length deviations shall be calculated to three decimal places using bend average radii and differences to four decimal places.

Lane 1	Distance (m)	Angle (gon)	Length (m)
Average radius curve A - D	32.3256	200.000	101.5539 (+)
Average radius curve C - B	32.3326	200.000	101.5759 (+)
Straight C – D (13)	N/A	N/A	97.509 (+)
Straight A – B (26)	N/A	N/A	97.514 (+)
Length of the inside border	N/A	N/A	398.1528 (=)

#### Deviation from the running length:

The deviation of the length of the inside border added to the planning length of the track from page 5 should also give the Theoretical Running Distance.

Lane 1	Distance Deviation (m)	Angle (gon)	Length Deviation (m)
Average deviation from desired value A - D	+0.0043	200.000	+0.0136 (+)
Average deviation from desired value C - B	+0.0113	200.000	+0.0356 (+)
Straight C – D (13)	N/A	N/A	-0.0040 (+)
Straight A – B (26)	N/A	N/A	+0.0010 (+)
Length of the inside border	N/A	N/A	+0.0462 (=)

### 3.3 Calculation of the Running Distance

Length of inside border (m)		398.1990 (+)
Theoretical running line (m, at 0.30m)	$0.300 \times \pi \times 2$	1.885 (+)
Theoretical Running Distance (TRD) (m)		400.084 (=)

### 3.4 Certification of the Length

The control of the inside length of the running track gives a length greater than 400m.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
The calculated difference of +0.084m (TRD-400m) is inside the permitted tolerance of 0.040m laid down in the Manual.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
The measurement of lane one was taken 0.30 metres outward from the kerb.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
The lengths of the other lanes were taken 0.20 metres from the outer edges of the lines.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

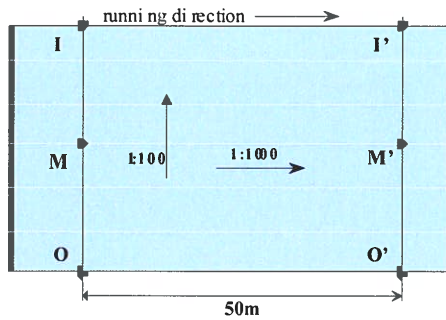
The direction of the running is left-hand inside. The lanes are numbered with the left hand inside lane numbered 1.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
The lateral inclination of the track less than 1:100 (1.0%)	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Distance before the 110m start line(s) (m):	20 m
Straight distance (run-out) after the finish line (m):	30 m
<i>If the distance before the 110m start is less than 3m for one or more lanes, please provide a sketch indicating the clearance for each lane.</i>	
<i>If there is a second straight, provide the distances achieved before the 110m start and after the finish line.</i>	

## 4. Incline of the Track

Please use separate drawings (proformas to be used are available on the website) for providing the required spot levels.

For ease of checking, it will assist if the level at the Finish Line is assumed to be 0.000m.

Test method: Three check-points should be taken in a line: inside lane one, in the centre of the track and outside the outer lane. Levels need to be provided at 200m, at the Finish Line on the oval track, and at the 100m and 110m start in the main straight.



If there are sprint lanes on the second side, then levels and measurements must be provided for this additional sprint track for it to be included on the certificate.

If there are more straight sprint lanes than oval lanes, provide levels on the straight at the outside lane as well, on the lane corresponding to the number of oval lanes. This applies also to a back straight sprint track marked for competition.

The sign convention for World Athletics for the inclinations is that an upward inclination in the direction of running is positive.

### 4.1 Lateral Incline

The lateral inclination of the track is towards the inside lane	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
The lateral inclination of the track less than 1:100 (1.0%)	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

### 4.2 Overall Incline

The overall inclination of the track in the running direction from starts to finish is less than 1:1000 (0.1%) downwards	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
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Notes:	In Section 3, there is no kerb. The radius dimensions were calculated by subtracting 0.10m from the averages to compensate for the forced 0.30m on this form. Per IAAF standard, when no kerb is present, the dimension is measured at 0.20m from the inside line as with the other lanes.
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## 5. International Markings on the Track

### 5.1 General

All lanes are marked by white lines.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
All markings are 0.05m wide.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
All start lines (except for curved start lines) and the finish line are marked at right angles to the lane lines.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
The staggered starts for 800m events are marked so that the first bend has to be run in separate lanes. The position of the start lines and the arced green breakline 0.05m wide at the beginning of the following straight are as given in the Manual.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
The outer curved start lines for 1000m, 2000m, 3000m, 3000mSC (optional), 5000m and 10,000m are marked in a way that all competitors will run the same distance. A green mark 0.05m x 0.05m on the line between lanes 4 and 5 at the beginning of the following straight indicates where athletes starting in the outer group may join the runners of the inner group.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
The four tangent points on the two straights, the points where the steeplechase curve meets a straight and the intersection of different radii curves on the steeplechase curve or double bend track are marked in a distinctive colour 0.05m x 0.05m on the white line of the inner lane.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
The following curved start lines are extended to the extent of the available synthetic.	
	1500m <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
	5000m <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
	10,000m <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
The 4 x 400m start lines are in accordance with the Manual (cf. 5.5 International Relay Races).	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
The intersection of the lane lines and the finish line is painted black in a suitable design to assist alignment of the Photo Finish equipment and to facilitate the reading of the Photo Finish image.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Immediately before the finish line, the lanes are marked with numbers with a minimum height of 0.50m read in the direction of running or from the outside of the track (optional) with the left-hand inside lane numbered 1.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
White lines, 0.03m wide and 0.80m (0.40m at 2m) long, are marked 1m, 3m and 5m before the finish line (optional)	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N

Notes:	There is a curved start line provided for 1600m and 3200m, but no other distances beyond 800m.
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## 5.2 International Starts

The following International Starts are marked on the track:

Races entirely or partly in separate lanes:

<b>100m</b>	white	straight	in separate lanes	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
<b>110m</b>				<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
<b>200m</b>				<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
<b>400m</b>				<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
<b>800m</b>	white/green/white	oval	first bend in separate lanes	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
<b>4 x 400m</b>	white/light blue/white		three bends in separate lanes	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Curved starts:

<b>800m</b>	white	lanes 1-8	2 full laps		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>2000m</b>			5 full laps		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>10,000m</b>			25 full laps		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N

<b>2000m</b>	white	outer start lanes 5-8	5 full laps	first bend in lane 5	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>10,000m</b>			25 full laps		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N

<b>1000m</b>	white	lanes 1-8	2 full laps + 200m		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>3000m</b>			7 full laps + 200m		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>5000m</b>			12 full laps + 200m		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N

<b>1000m</b>	white	outer start lanes 5-8	2 full laps + 200m	first bend in lane 5	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>3000m</b>			7 full laps + 200m		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>5000m</b>			12 full laps + 200m		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N

<b>1500m</b>	white	lanes 1-8	3 full laps + 300m		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
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<b>Mile</b>	white	lanes 1-8	4 full laps+9.34m		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
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Steeplechase:

<b>2000m</b>	white	lanes 1-8	→ C. The Steeple Chase Track		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>3000m</b>					<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
<b>3000m</b>		lanes 5-8	(optional)		<input type="checkbox"/> Y <input checked="" type="checkbox"/> N

Notes:	The only curved start marked on the track is for 1600m and 3200m.
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### 5.3 Start Measurement

All measurements shall be in m to three decimal places.

No negative tolerances are allowed in the measured distance of races.

All distances were measured in a clockwise direction from the edge of the finish line nearer to the start to the edge of the start line farther from the finish.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
The measurement of the curved start lines ensures that all runners start the same distance from the finish.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Measured Distance to Finish Line:

Start	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8	Lane 9
100m	100.039	100.034	100.029	100.024	100.019	100.014	100.010	100.005	
110m	110.027	110.023	110.019	110.014	110.007	110.006	110.002	110.000	
200m	200.032	200.028	200.009	200.002	200.025	200.020	200.014	200.018	
400m	400.041	400.000	400.030	400.029	400.028	400.034	400.039	400.006	
800m	800.082	800.086	800.112	800.102	800.144	800.133	800.148	800.178	
4x400m	1600.16 3	1600.10 3	1600.15 7	1600.14 3	1600.17 7	1600.17 2	1600.17 9	1600.22 5	

If there are sprint lanes on the second side then measurements must be provided for this additional sprint track for it to be included on the certificate.

Measured Distance to Finish Line on the second side:

Start	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8	Lane 9
100m									
110m									

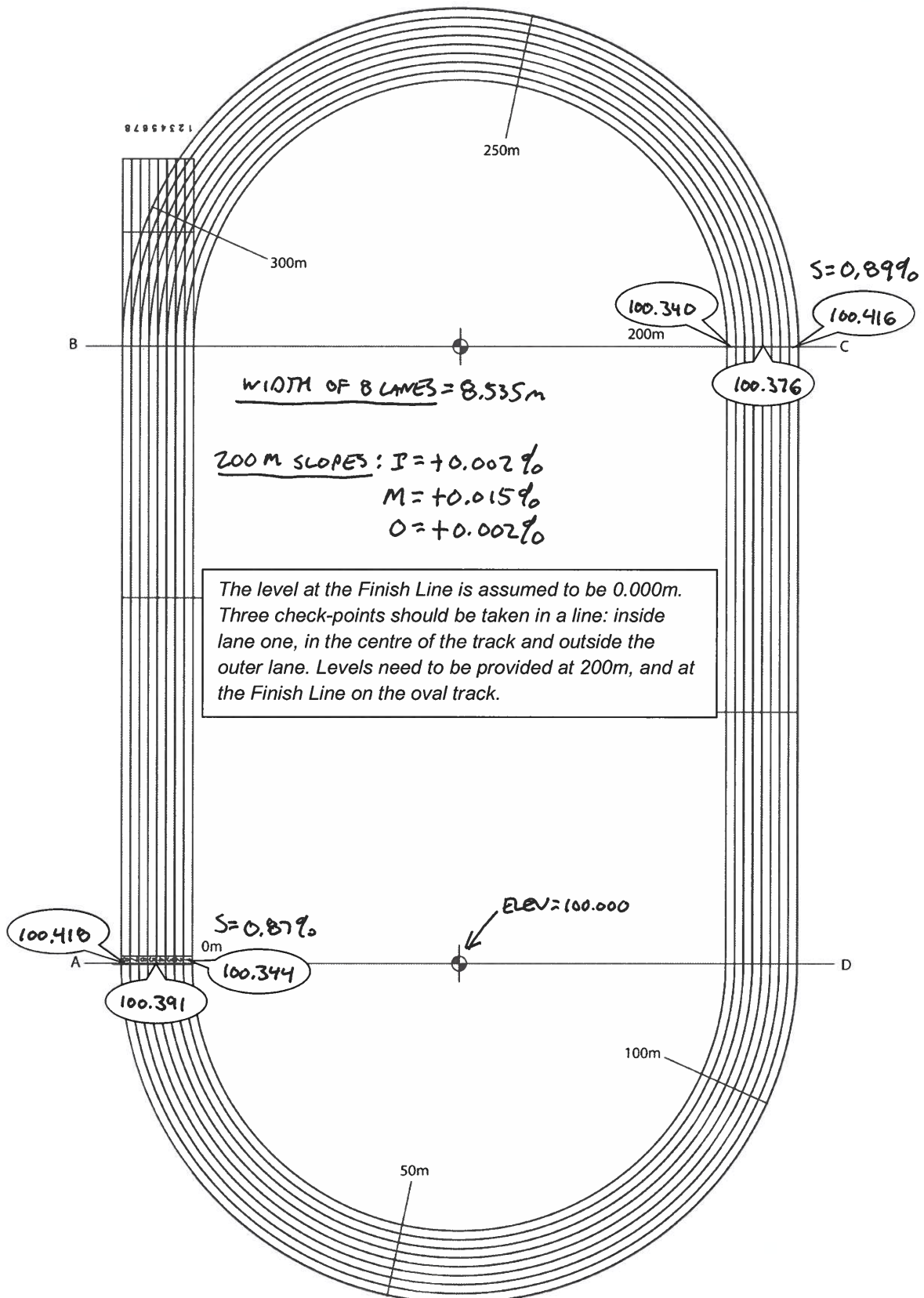
Measured Distance to Finish Line First Lap:

Curved Start	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8	Lane 9
1500m									
1000m 3000m 5000m									
800m 2000m 10,000m									
1000m 3000m 3000mSC* 5000m	Outer start lane 5-8								
2000m 10,000m									

\*optional

Notes:	
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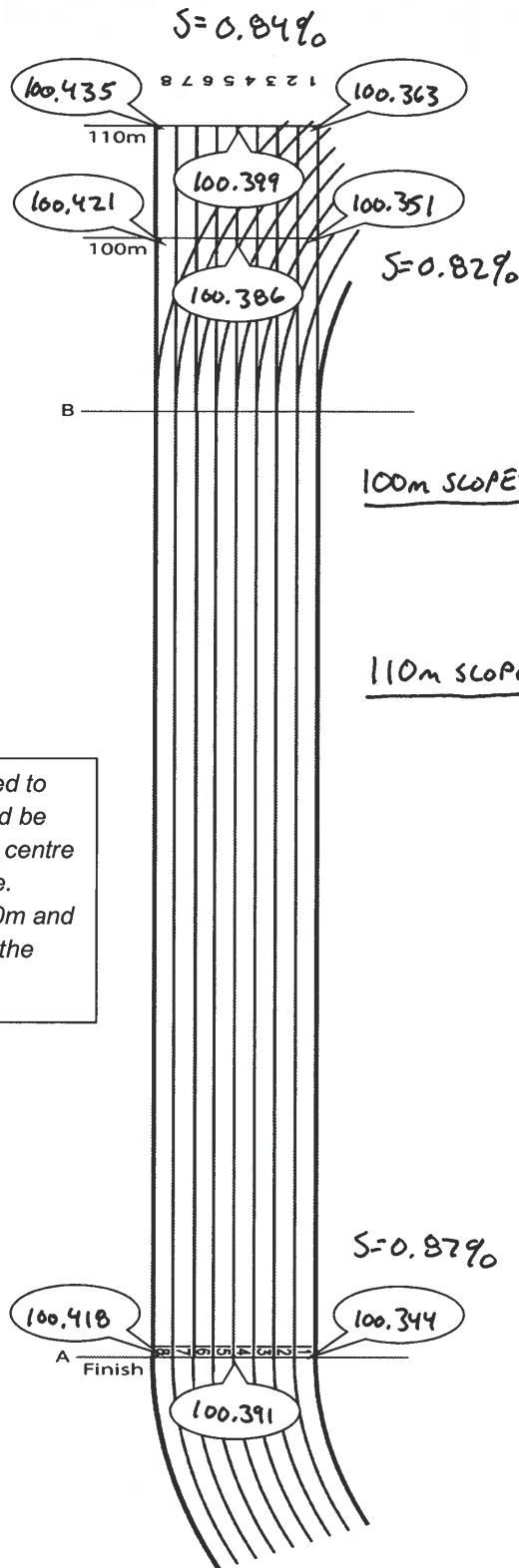




Name and City of Facility: BRIMHALL FIELD @ WEST WOOD HIGH SCHOOL  
 MESA, AZ

# Levels – Finish Straight

FORM: TMO LEVELS



The level at the Finish Line is assumed to be 0.000m. Three check-points should be taken in a line: inside lane one, in the centre of the track and outside the outer lane. Levels need to be provided at the 100m and 110m start, and at the Finish Line on the straight.

Name and City of Facility: BRIMHALL FIELD @ WESTWOOD HIGH SCHOOL  
 MESA, AZ

# OUTSIDE OBSTRUCTIONS



↑  
FACE

↑  
ELECTRIC  
POST

↓  
OUTLETS



INSIDE OBSTRUCTION

HEADWALL



**CALIBRATION BASELINE CHECKS**  
February 12, 2020

<u>INST STA</u>	<u>BS STA</u>	<u>RECORD HD</u>	<u>MEASURED HD</u>	<u>DELTA HD</u>
0 M	150 M	149.9901	149.990	0.000
0 M	400 M	399.9962	399.993	-0.003
0 M	1080 M	1080.0239	1080.038	0.014
150 M	400 M	250.0061	250.005	-0.001
150 M	1080 M	930.0338	930.032	-0.002
400 M	1080 M	680.0277	680.028	0.000

INST = Instrument  
BS = Backsight  
STA = Station  
HD = Horizontal Distance

Instrument: Trimble S7 Total Station  
Serial Number: 37410510  
Temperature: 57° - 60° F  
Barometric Pressure: 30.06 inHg at sea level, 28.87 inHg actual  
Approximate Site Elevation: 368m above sea level

All measurements are in metric.



3033 North 44th Street  
Suite 250  
Phoenix, Arizona  
85018

Tel 602.244.2566  
Fax 602.244.8947  
Web [www.entellus.com](http://www.entellus.com)



# Certificate

**TRIMBLE S7 3" DR Plus WITH SERIAL NUMBER 37410510  
COMPLIES WITH THESE SPECIFICATIONS:**

## ANGLE MEASUREMENT

**Accuracy (Standard deviation  
based on DIN 18723):** 1.0 mgon = 10 cc (3")  
**Automatic level compensator**  
**Dual-axis with a working range of:** ±100 mgon = 10 c (5.4')

## DISTANCE MEASUREMENT

**Prism mode**  
**Accuracy (RMSE):** 2 mm + 2 ppm (0.0065 ft + 2 ppm)

**DR mode**  
**Accuracy (RMSE):** 2 mm + 2 ppm (0.0065 ft + 2 ppm)

## RANGE

**Prism mode**  
**1 prism:** 0.2 m - 5,500 m (0.65 ft - 18,044 ft)

**DR mode**  
**Kodak Grey (18%):** 1 m - 600 m (3.28 ft - 1,969 ft)

Full specifications of this instrument are available in the Datasheet,  
it could be downloaded from [www.trimble.com](http://www.trimble.com)

*Trimble instrument type Trimble S7 DR Plus has been tested and complies with the original specification. Tests have been conducted over established baselines and angular measurements have been achieved by testing at calibrated baselines at Trimble AB, Sweden. DM Baselines at Trimble AB, Sweden, has been calibrated with the special Trimble instrument which is calibrated at the Physikalisch Technische Bundesanstalt Braunschweig, Germany. The special Trimble instrument has calibration certificate 50866 PTB 14. All the above procedures are documented in accordance with ISO 9001(2008) issued by DNV certification AB, Sweden.*

**COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV GL  
=ISO 9001=**

*Anders Sjöström*

Anders Sjöström, Inspector  
11/08/2015, Danderyd, Sweden



# ALLEN Instruments & Supplies

Arizona: 7114 East Earll Drive--Scottsdale, AZ 85251--Toll free: 800.272.0180 Office: 480.994.1306--Fax: 480.994.8337

## TRIMBLE ROBOTIC INSPECTION SHEET

**CUSTOMER:** Entellus  
**INSTRUMENT MODEL:** S7 3" DR Plus  
**S/N:** 37410510  
**FW/SW VERSION:** H1.0.18  
**SWO#**

**DATE of INSPECTION:** 11/19/2015  
**SERVICE CENTER LOCATION:** AZ  
**TECHNICIAN:** Bill Davis  
**HOURS OF OPERATION:** 9  
**PO#**

### ECCENTRICITY VERTICAL & HORIZONTAL CIRCLE:

VA1 90°: 090° 00' 00"  
 HA F1: 000° 00' 00"

VA2 270°: 270° 00' 00"  
 HA F2: 180° 00' 00"

F1 +30°: 060° 07' 30"  
 F2 +30°: 299° 52' 30"

F1 -30°: 120° 51' 30"  
 F2 -30°: 239° 08' 30"

**SOLUTION:** 360° 00' 00"

360° 00' 00"

VERT 0" ERROR OK  /CENTERED \_\_\_\_\_

HORZ 0" ERROR OK  /CENTERED \_\_\_\_\_

ZERO INDEX OK  /ADJ \_\_\_\_\_

PLUNGE OK  /ADJ \_\_\_\_\_

DOUBLE CENTER OK  /ADJ \_\_\_\_\_

LEVEL VIAL OK \_\_\_\_\_ /ADJ \_\_\_\_\_

OPTICAL PLUMMET OK \_\_\_\_\_ /ADJ  \_\_\_\_\_

TRACKER OK  /ADJ \_\_\_\_\_

RADIO TEST: @/ 900' OK  \_\_\_\_\_

TRIBRACH BUBBLE OK \_\_\_\_\_ /ADJ  \_\_\_\_\_

CAMERA CALIBRATION \_\_\_\_\_

### TILT SENSOR:

V MOVING RANGE OK  /ADJ \_\_\_\_\_

WORKING RANGE OK  /ADJ \_\_\_\_\_

H MOVING RANGE OK  /ADJ \_\_\_\_\_

WORKING RANGE OK  /ADJ \_\_\_\_\_

### DISTANCE CHECK: (0 mm offset)

BASELINE (m)	MEASURED (m)	ERROR
121.412 m	121.413 m	+1mm
74.201 m	74.203 m	+2mm
205.993 m	205.994 m	+1mm
29.156 m	29.156 m	0mm
88.957 m	88.956 m	-1mm

This Instrument has been completely inspected & calibrated to manufacturers specifications on the date stated on this form.

# ALLEN Instruments & Supplies

Arizona: 7114 East Earll Drive--Scottsdale, AZ 85251--Toll free: 800.272.0180 Office: 480.994.1306--Fax: 480.994.8337

## TRIMBLE ROBOTIC INSPECTION SHEET

**CUSTOMER:** Entellus  
**INSTRUMENT MODEL:** S7 3" DR Plus  
**S/N:** 37410510  
**FW/SW VERSION:** H1.0.18  
**SWO#**

**DATE of INSPECTION:** 11/19/2015  
**SERVICE CENTER LOCATION:** AZ  
**TECHNICIAN:** Bill Davis  
**HOURS OF OPERATION:** 9  
**PO#**

### ECCENTRICITY VERTICAL & HORIZONTAL CIRCLE:

VA1 90°: 090° 00' 00"

VA2 270°: 270° 00' 00"

HA F1: 000° 00' 00"

HA F2: 180° 00' 00"

F1 +30°: 060° 07' 30"

F1 -30°: 120° 51' 30"

F2 +30°: 299° 52' 30"

F2 -30°: 239° 08' 30"

SOLUTION: 360° 00' 00"

360° 00' 00"

VERT 0" ERROR OK  /CENTERED \_\_\_\_\_

HORZ 0" ERROR OK  /CENTERED \_\_\_\_\_

ZERO INDEX OK  /ADJ \_\_\_\_\_

PLUNGE OK  /ADJ \_\_\_\_\_

DOUBLE CENTER OK  /ADJ \_\_\_\_\_

LEVEL VIAL OK \_\_\_\_\_ /ADJ \_\_\_\_\_

OPTICAL PLUMMET OK \_\_\_\_\_ /ADJ  \_\_\_\_\_

TRACKER OK  /ADJ \_\_\_\_\_

RADIO TEST: @/ 900' OK  \_\_\_\_\_

TRIBRACH BUBBLE OK \_\_\_\_\_ /ADJ  \_\_\_\_\_

CAMERA CALIBRATION \_\_\_\_\_

### TILT SENSOR:

V MOVING RANGE OK  /ADJ \_\_\_\_\_

WORKING RANGE OK  /ADJ \_\_\_\_\_

H MOVING RANGE OK  /ADJ \_\_\_\_\_

WORKING RANGE OK  /ADJ \_\_\_\_\_

### DISTANCE CHECK: (0 mm offset)

BASELINE (m)	MEASURED (m)	ERROR
121.412 m	121.413 m	+1mm
74.201 m	74.203 m	+2mm
205.993 m	205.994 m	+1mm
29.156 m	29.156 m	0mm
88.957 m	88.956 m	-1mm

This Instrument has been completely inspected & calibrated to manufacturers specifications on the date stated on this form.





## Calibration Certificate

### Product Details

Serial Number : 37410510  
Product Part Number : S7353200  
Description : Instrument - Trimble S7 3" Robotic, DR Plus, Trimble VISION, FineLock, Scanning Capable

This product has been serviced and calibrated following Trimble service procedures and complies with the product specifications at time of completion of service.  
The product specifications are available at [www.trimble.com](http://www.trimble.com).  
Please refer to the User Manual for on site product calibration recommendations.

### Customer Specific Information

Hours: 496

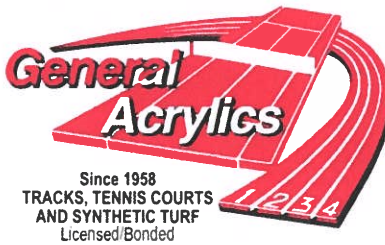
Service Provider Name : Allen Instruments & Supplies  
Service Case Number : 50388  
Date : 12/3/2019  
Performed By : Bill Davis



Atlas is a Trimble Repair Services program. Calibration Certification reports are generated from the Atlas tool owned by Trimble. Only Trimble Authorized Service Providers can generate Calibration Certificates for Trimble customers with the Atlas Workflow software.

2/4/2020

Chuck Sharpless  
Mesa Public Schools  
555 South Lewis  
Mesa, AZ 85210



**RUNNING TRACK HISTORY FOR WESTWOOD HS (MESA, AZ)**

Dear Mr. Sharpless,

Per your request, I am providing you with a history of major running track scope(s) we have performed at Westwood high School (running track)

In 2004, General Acrylics was awarded the opportunity to rebuild/re-construct the running track for the Mesa School District under the bid opportunity # 24-84C

The district contact we worked with at that time was Larry hook and we reconstructed the entire running track oval and field events, etc (7864 yd.<sup>2</sup>)

The scope consisted of bringing in new aggregate base course, concrete, asphalt, and a new all-weather track surface (called a "Spartan BS"-by Advanced Polyamar Technology).

This system is a black rubber (polyurethane) base mat system with structural spray coats applied to the top of it (color RED)

I am providing specification and cut sheets for this product/system and it will supplement this letter.

Several years later (in 2013) we returned to WHS and applied new coats of a structural re-spray product (Spartan S) in the color RED and then restriped the running track. As I have done with the original installation system, I am providing you with a cut and specification sheet for the Spartan re-spray product as well.

Most recently, in 2018, we returned to campus once again to perform the same scope we did in 2013 (a respray/restripe application)

The most current striping sheet (2018) is also being provided to you, as is the original one that was approved and submitted to us back in 2004...so that you can see in both cases we met the (NFHS) National Federation of High School requirements for striping

Although there were plans and drawings that were composed back in 2004 for the reconstruction of the track there was never a request back then (nor at either of the recent respray applications) to have the track certified through any of the 5 class certifications that are available to customers all the way up to an IAAF accreditation. I have provided you pricing and descriptions of what each certification level offers and am open to any questions you might have after reviewing that doc.

I am hopeful that this information is sufficient and meet your expectations and if there's anything else I can do to assist please don't hesitate to reach out to me

Again please see the email that this letter was sent to you in as there are supplemental attachments to go with it Thank you,

Sincerely,

A handwritten signature in blue ink that reads "Mike Wickham".

Mike Wickham  
General Acrylics



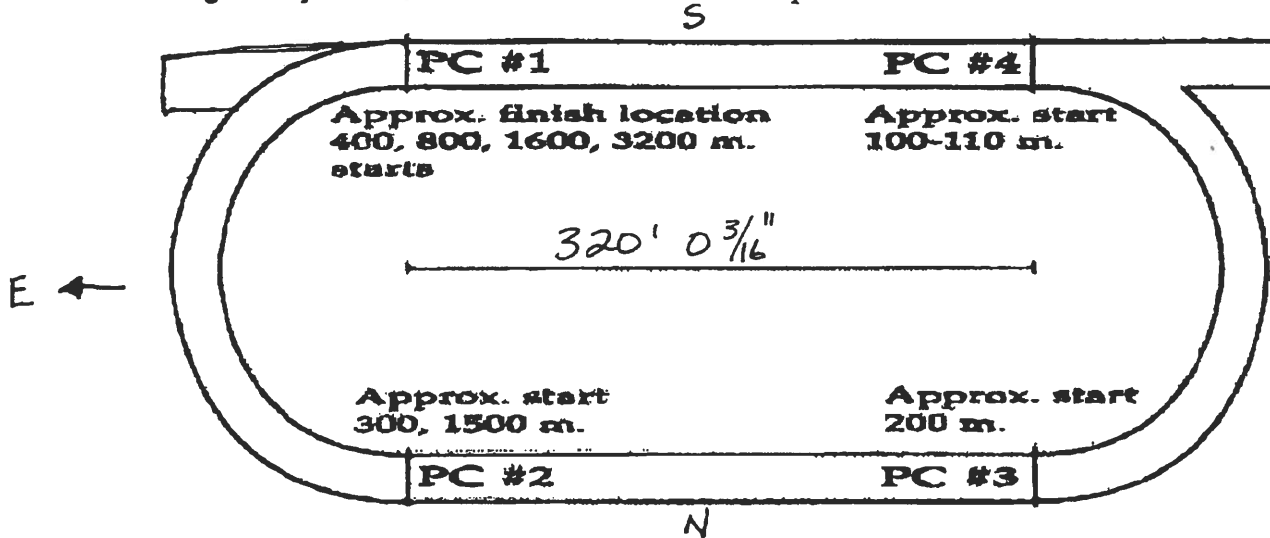
(602) 569-9377 • Fax (623) 298-1310 • Toll Free (800) 436-2279  
22222 N 22<sup>nd</sup> Avenue • Phoenix, AZ 85027  
[www.generalacrylics.com](http://www.generalacrylics.com)



### TRACK STRIPING INFORMATION REQUEST

Facility Name Westwood High School Location 945 W. 8<sup>th</sup> Street, Mesa, AZ

This is a diagram of your track. Please fill in the information requested below.



The finish line is typically located between 0 and 20 meters from PC #1. Indicate preferred finish line location:  
 0 meters    10 meters    20 meters    other (indicate) \_\_\_\_\_

All white lane lines are recommended, and are industry standard.

Number of lanes: 8 Lane width: 42"

Track is designed for:    Raised Inside Curb    Painted Inside Line

Four (4) sets of 3' tall lane numbers are included, and may be "shadowed" upon request below. Select colors:

Numbers:    White    Yellow    Red    Blue    Green    Black    Orange    Purple  
 Shadows:    White    Yellow    Red    Blue    Green    Black    Orange    Purple

Specify desired number locations (choose any four):

Finish Line    300 meter starts    200 meter starts    Near 100 or 110 start (as track configuration dictates)  
 Middle of back straight-away    400 meter starts

One set each, event markings. Indicate the appropriate events for your track:

- 100 meter dash and hurdles (white start and yellow hurdles)
- 110 meter hurdles (white start and blue hurdles)
- 200 meter dash (white starts)
- 300 meter hurdles (High School Only) (white starts and red hurdles)
- 400 meter hurdles (IAAF, NCAA Only) (white starts and green hurdles)
- 4x100 relay (white starts and yellow exchange zones)
- 4x200 relay (red starts, red exchange zones) Stagger start utilized:    2 turn    3 turn    4 turn
- 4x400 relay (blue starts, blue exchange zones) Stagger start utilized:    1 turn    2 turn
- 800 meter run (green starts) Box alleys?    Yes    No
- 2000 meter steeplechase (NCAA only) (white starts and white barriers)
- 3000 meter steeplechase (NCAA and IAAF only) (white starts and white barriers)
- Distance Races:    1500m    1600/3200/10,000m    3000/5000m (all white start lines)

Specify desired distances for painted takeoff boards for long jump and triple jump, if any:

TJ BOARDS - 24' & 32' FROM EDGE OF PIT - WEST RUNWAY ONLY

WESTWOOD H.S.  
Page 2

The items on page one will provide a fully functional and attractive running track.

We can also provide the following custom items (at an additional cost over original contract amount) to further enhance the usefulness and/or aesthetics of the track:

- Finish line warning marks  
(5 marks, 1 meter apart, in each lane, prior to the finish line) \$105.00 Add to contract \$ \_\_\_\_\_
  - Border striping on runways or ~~high jump pad~~ LJ/TJ runways (cost is per runway or pad) \$ 67.00 INC. in BID SPECS. Add to contract \$ \_\_\_\_\_
  - Alternating color lane lines \$667.00 Add to contract \$ \_\_\_\_\_
  - Additional events such as sprint hurdles running both directions or on back straight-away (cost is per event) \$133.00 Add to contract \$ \_\_\_\_\_
  - 3' tall shadowed lettering of school name, mascot, etc. (cost is per letter) Specify verbiage and location: \_\_\_\_\_ \$ 13.33 Add to contract \$ \_\_\_\_\_
  - Additional sets of lane numbers (cost is per set) \$ 93.00 Add to contract \$ \_\_\_\_\_
  - Custom logos or other custom work Call for quote
  - Stripe discus pad circles (cost per circle) \$200.00 Add to contract \$ \_\_\_\_\_
  - Stripe shot put circles (cost per circle) \$200.00 Add to contract \$ \_\_\_\_\_
- Total add to contract: \$ \_\_\_\_\_

Form completed by: MARK HILLIKER Title: CONSULTANT Date: 9/28/04

Office phone: \_\_\_\_\_ Cell Phone: 602-300-0757

Fax: \_\_\_\_\_

Fax this completed form to General Acrylics, Inc. at 623-298-1310

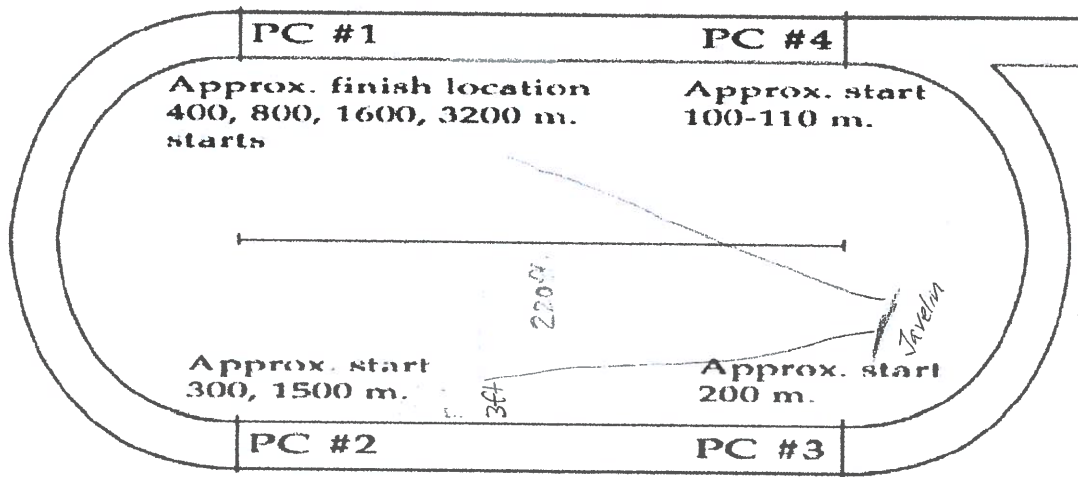
Please call us at 800-436-2279, if you need assistance filling out this form.

\* PAINT DISTANCE MEASUREMENTS ON LJ/TJ RUNWAYS - EVERY 5' APART. FROM THE LONG JUMP TAKE OFF BOARD. STARTING AT 50' ENDING AT 120'.

\* PAINT DISTANCE MEASUREMENTS ON P.V. RUNWAY AT 7', 8', 9', 10', 11', 12' FROM THE BACK EDGE OF PLANT BOX. EVERY 5' APART STARTING AT 20' ENDING AT 120'.

## TRACK STRIPING INFORMATION REQUEST (Rev. 11/14)

1. Facility Name: Westwood HS Street Address: 945 W Rio Salado Pkwy Mesa, AZ 85201
2. This is a diagram of a typical track for your reference. Please fill in the information requested below.



*Javelin has to be at an angle to not go on track at 220ft.*

3. Exact radius point to radius point (aka straight-away) distance (if known): \_\_\_\_\_
4. Track is:  Standard Configuration  Broken Back  Other (explain) \_\_\_\_\_
5. If certification is required, check here  If box is checked, what type/level of certification is needed? \_\_\_\_\_  
*(Additional charges will be incurred)*
6. The finish line is typically located between 0 and 20 meters from PC ("point of curve") #1. Indicate preferred finish line location:  
 0 meters  10 meters  20 meters  other (indicate) \_\_\_\_\_
7. All white lane lines are recommended, and are industry standard.
8. Number of lanes: 8 Lane width: \_\_\_\_\_
9. Track is designed for:  Raised Inside Curb  Painted Inside Line
10. Four (4) sets of 3' tall lane numbers are included, and may be "shadowed" upon request below. Select colors:  
 Numbers:  White  Yellow  Red  Blue  Green  Black  Orange  Purple  
 Shadows:  White  Yellow  Red  Blue  Green  Black  Orange  Purple
11. Specify desired number locations (choose any four):  
 Finish Line  300 meter starts  200 meter starts  Near 100 or 110 start (as track configuration dictates)  Middle of back straight-away  400 meter starts
12. One set each, event markings. Indicate the appropriate events for your track:
- 100 meter dash and hurdles (white start and yellow hurdles)
  - 110 meter hurdles (white start and blue hurdles)
  - 200 meter dash (white starts)
  - 300 meter hurdles (High School Only) (white starts and red\* hurdles)
  - 400 meter hurdles (IAAF, NCAA Only) (white starts and green hurdles)  
*NOTE: Additional cost if both 300m AND 400m hurdles are chosen.*
  - 400 meter run (white starts)
  - 4X100 relay (white starts and yellow exchange zones)

- h.  4X200 relay (red\* starts, red\* exchange zones)  
Stagger start utilized:    2 turn    3 turn  4 turn
- i.  4X400 relay (blue starts, blue exchange zones)  
Stagger start utilized:    1 turn    2 turn  3 turn
- j.    2000 meter steeplechase (if facility includes a water pit) (white start and black or blue barriers)
- k.    3000 meter steeplechase (if facility includes a water pit) (white start and black or blue barriers)
- l.  800 meter (green staggered starts)
- m.    1500 meter (white waterfall start)
- n.  800/1600/3200/10k meter (white waterfall start) (one start for all four events if track is 400m)
- o.    3000/5000m (white waterfall start) (one start line for both events if track is 400m)

\*Please note that on red tracks, unless otherwise requested, markings indicated to be red will be painted white or black in lieu of rulebook suggested color.

13.  Check here if multi-lane box alleys or super alleys are needed for any of the above distance runs.  
If checked, please specify which race(s), and the number of lanes per alley. 2 lanes per alley

14.  Check here if painted takeoff "boards" are needed for long jump and/or triple jump runways.  
If checked, please specify distances needed: Triple Jump 24' 28' 32' 36' 40'

15. Contact Info: (In case we have questions prior to, or after arrival on site)

- a. Form completed by: James Smith Title: Head Coach Date: 5/7/18
- b. Office phone: \_\_\_\_\_ Cell Phone: 602-319-2523
- c. E-mail: Coachjamesaz@gmail.com

E-mail this completed form to General Acrylics at [micknam@generalacrylics.com](mailto:micknam@generalacrylics.com)

Please call Mike Wickham at (602) 790-7129, if you need assistance completing this form.

16. Additional Items:

The items listed on page one and two will provide a fully functional and attractive running track.

We can also provide the following custom items to further enhance the usefulness and/or aesthetics of the track:

- a.  Finish line warning marks:  
(5 marks, 1 meter apart, in each lane, prior to the finish line...price is per lane) \$ 10.49 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- b.  Black out intersections of finish line and lane lines for photo finish equipment: (price is per lane) \$ 3.70 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- c.  Alternating or alternative color lane lines:  
(please indicate color(s) below) \$ 61.68 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- d.  Additional sprint hurdles running opposite direction on  
The main straight-away or added to back straight-away  
(cost is per event, per direction)  
Indicate races/location: \_\_\_\_\_ \$ 20.97 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- e.  Add if both 300m and 400m intermediate hurdles are needed: \$ 41.94 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- f.  3' tall shadowed lettering of school name, mascot, etc.  
(cost is per letter) Specify verbiage and location:  
Westwood Warriors \$ 19.74 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- g.  Additional sets of lane numbers (cost is per lane) \$ 7.40 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- h.  Border striping on runways (cost is per runway) \$ 66.62 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- i.  Pole vault marking system (paint "zero line",  
6'-13' marks in 1' increments, and 20'-120' in 10'  
increments – price per runway) \$ 83.89 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- j.  Deluxe pole vault marking system (paint "zero line",  
6'- 13' marks in 6" increments, and 20'-120' in 1'  
increments – price per runway) \$ 222.05 X \_\_\_ = Add to contract \$ **INCLUDED**
- k.  Stripe discus pad circles (cost per circle) \$ 111.03 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- l.  Stripe shot put circles (cost per circle) \$ 111.03 X \_\_\_ = Add to contract \$ \_\_\_\_\_
- m.  Additional items requested (including certification):  
(varies) Add to contract \$ \_\_\_\_\_

Description:  
The deluxe markings are already included for pole vault and jump runways \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Javelin marking on #1 D on West  
end of track at an angle so it  
it does not hit fence.*

Changes Reviewed/Priced by: \_\_\_\_\_

Total add to contract: \$ \_\_\_\_\_

The changes noted on the preceding pages are acceptable, and we agree to pay for these changes in the amount specified above:

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_ Organization: \_\_\_\_\_

Signature: \_\_\_\_\_

Instructions and Explanations for Track Striping Information Request  
The item numbers below correspond with the question numbers on the form

1. Provide school and facility name along with a street address appropriate for GPS navigation.
2. This is a diagram of a typical track to illustrate approximately where various starts will be located. The length and location of the starting chutes (and run-out chutes, if included) may vary from this diagram.
3. List the exact design length of the straight-away. This is frequently a question that needs to be answered by the designer or contractor.
4. Note whether the track is standard configuration, or something unusual, like a double bend (broken back.) This is required, as "non-standard" configurations require additional engineering, and more data from the designer.
5. Although it's not needed for the majority of tracks, those hosting state, national, or international championships are candidates for certification. If unsure, ask your designer or contractor which is the right certification for your track.
6. The most common finish line location (and the only allowable location for IAAF) is at 0 meters from PC#1(aka "PC Finish"). NFHS allows any distance between 0 and 20 meters from PC#1. NCAA does not specifically state a preferred or mandatory location. However, since the NCAA rules book refers to IAAF as the suggested reference for track construction and marking perimeters, it is *implied* that they too require a PC Finish. If in doubt, inquire with NCAA.
7. IAAF and NCAA call for lane lines to be white in color. NFHS does not specify. White has proven to be the most visible for participants running into the sun, or in low light conditions. If you desire colors other than white, you'll have the opportunity to add that on page 3. Additional costs are incurred because of re-configuring of machine and the added cost of "non-white" colors.
8. The number of lanes is governed by the available surface available at the 400m (or specified) length. Standard lane width for NFHS tracks is 3.5' (3' minimum *implied*), however, lanes smaller than 3.5' are not suggested unless absolutely necessary, as this may require hurdle modifications. NCAA's min/max is 3.5' to 1.22m (4'). IAAF requires a lane width of 1.22m.
9. For tracks where lane 1 will be bordered by a 2" painted line only, choose "painted inside line". If the track will have an inside line painted as a guide for placement of an aluminum (or some other material) curb, or if the inside running boundary is a raised concrete curb 2" or more above the surface, choose "raised inside curb". This is a very important question, as nearly every line and marking on the track is in a different location if a raised inside curb is chosen.
10. The most common color for lane numbers is white. Other colors can be chosen along with contrasting colors for shadows (outlines) to incorporate school colors. The colors listed are standard. Custom colors require a color sample, additional lead time, and possibly an additional charge (depending on color)
11. The most common locations for lane numbers are: Finish line, at or near the 100m or 110m (located so that the numbers do not interfere with the curved portion of track), the 200m starts, and the 300m starts. 4 sets of numbers are included. The most popular location for a 5<sup>th</sup> set is at the 400m starts.
12. The track will be marked with your choice of one each of the itemized events. The appropriate rulebook colors are noted by each event. Unless requested otherwise, we will utilize an alternative neutral color, such as white or black for tracks where a conflict occurs between track color and marking color (eg. a red track with red marks).  
Note for item 12h: Many states do not run the 4x200 (800m Relay), however, those who do, most commonly run that event using a 4 turn stagger start (entire race run within lanes). A few states, like New Mexico, utilize a 2 two turn stagger start. Rarer still are locales that use a 3 turn stagger start. Check with your state association if unsure.  
Note for item 12i: The 4x400 (1600m Relay) is most commonly run using a 3 turn stagger start (break to lane one after first exchange plus one curve). In some states, smaller schools utilize a 1 turn stagger start (break to lane one immediately after first curve), or a 2 turn stagger start (break to lane one immediately after first exchange). Check with your state association if unsure.
13. Box Alleys and Super Alleys allow for more participants per heat in distance races. If needed, high school tracks will most commonly utilize box alleys (typically two lanes each) for the 800m, 1600m and 3200m runs. College and International tracks will most commonly utilize Super Alleys (for the outer 4 or 5 lanes, depending on total number of lanes) in the 3000m, 5000m, and 10,000m events.
14. Although many coaches wish to utilize alternative takeoff board locations, the standard locations from the beginning of the sand pit to the foul line (the edge of the "board" nearest the sand pit) follow:  
NFHS: Girl's Long Jump: 8'. Boy's Long Jump: 12'. Girl's Triple Jump: 24'. Boy's Triple Jump: 32'.  
Middle School/Jr. High: Boy's and Girl's Long Jump: 8'. Girl's Triple Jump: 16'. Boy's Triple Jump: 20'.  
NCAA: Long Jump: Between 1 and 3 meters, providing that there is a distance of at least 10 meters between the foul line and the further edge of the sand pit. Women's Triple Jump between 8.5 and 11 meters. Men's Triple Jump: Between 11 and 12.5 meters.
15. Contact information provided should be for the person who can quickly answer any questions that may arise regarding the track markings, or other issues, such as making sure the irrigation is turned off. Often we will arrive over a weekend, or over a school break, so it's good to have a cell number to call. If you want to make sure you're not disturbed between certain hours or on certain days, please note that, and we will honor that request.
16. Question 16 is a list of popular additional items that are occasionally requested. Note that although not specifically mentioned, all tracks **will** include a breakline at PC #2 for the 800m, and 4x400m Relay. Also, by virtue of having a one turn 800m start and a 4x400m Relay, you will automatically have the markings needed to run the 4x800m Relay. If you need any additional items (question 16m), please call the number on page 2 to verify if added costs apply before completing the form. Lastly, if you do have any additional items that include additional charges, sign and date the last portion of the form, so we know we're okay to complete that work and bill for those additions.



*Spartan BS*



POWERED **BY**  
sportgroup

# Spartan BS

Spartan BS is a two layer, 13mm, permeable spray coat track system. The base layer consists of a black mat of SBR rubber granules bound in polyurethane. The surface layer is made up of polyurethane and colored EPDM granules applied by spray to provide a structural topcoat.

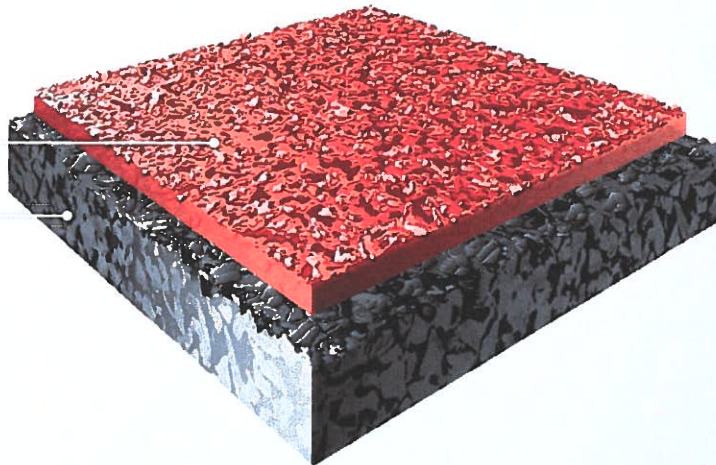
SMART  
TECHNOLOGY  
AVAILABLE

## HIGHLIGHTS

- IAAF approved system
- Permeable structural spray coat system
- Excellent force reduction
- Ideal for regional tracks and universities
- Spike resistant
- Available in multiple colors
- Aliphatic top coat option available
- Premium colors available upon request

Qualipur Structural  
Spray encapsulation

SBR and binder basemat



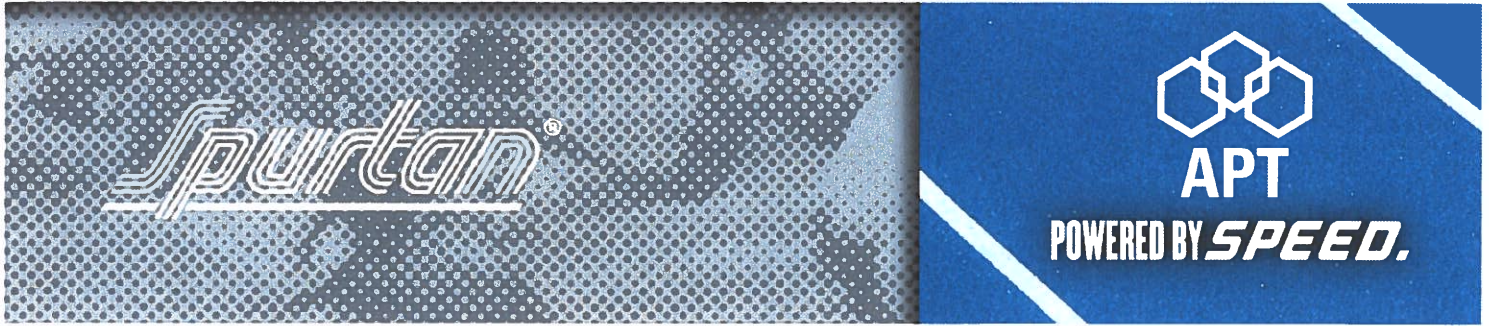
**sportgroup**  
THE SURFACE SPECIALISTS



[www.rekortan.com](http://www.rekortan.com)

[info@rekortan.com](mailto:info@rekortan.com)





## **SYNTHETIC TRACK SURFACING- SPURTAN® BS SPECIFICATION**

### **PART 1- GENERAL**

#### **1.01 SUMMARY**

A. The contract work to be performed under this section consists of furnishing all required labor, materials, equipment, implements, parts and supplies necessary for, the surfacing in accordance with these specifications and indicated on the drawings.

1. Spartan® BS – A 13mm polyurethane bound running track surface with a structural spray finish.

#### **1.02 CODES AND STANDARDS**

A. Codes and standards follow the current guidelines set forth by the International Associations of Athletics Federation (IAAF), the National Collegiate Athletic Association (NCAA) or the National Federation of State High School Associations (NFHS).

#### **1.03 SUBMITTALS AND SUBSTITUTIONS**

A. Request for deviations or substitutions from the specifications must be made in writing seven days prior to the bid date. Complete product data including specifications, application rates, mixing instructions and a sample shall be sent with the request to the district and/or its agent for an evaluation. Alternatives will be allowed only by addendum.

1. Submit three (3) sets of manufacturer's product data sheets including installation guidelines and maintenance guidelines.
2. Submit three (3) representative track samples in the color of surfacing to be installed.
3. Submit Safety Data Sheets (SDS) for all individual components of the system to be installed.
4. Submit evidence that the synthetic surfacing contractor is a member of the American Sports Builders Association (ASBA)

## 1.04 QUALITY ASSURANCE

- A. The track surface installer shall be authorized by APT (Manufacturer) and possess a minimum of ten (10) years' experience of installing the specified system.
- B. The supervisor of the installing company must have ten (10) years' experience in surfacing with the specified polyurethane system. A letter of certification must accompany the bid proposal.
- C. The supervisor, of the installing company, must have installed a minimum of ten (10) IAAF certified track systems, within the last three (3) years. A letter of certification from the manufacturer must accompany the bid proposal.
- D. The manufacturer (APT) must represent a minimum of four (4) IAAF approved track systems.
- E. All material components must be procured and manufactured from APT, a single source. No substitutes allowed.
- F. All polyurethanes used must be manufactured by APT an ISO 9001 and ISO 14001 Certified Company. Manufacturer's ISO 9001 and ISO 14001 certificate must accompany bid.**

## 1.05 SITE CONDITIONS

- A. Weather: Surfacing shall not begin if rain is imminent, if gusting winds are occurring or when the threat of freezing exists within 24 hours.
- B. Site: During any surfacing and striping, sprinkler systems must be shut off or controlled so that no water falls on the track or event area surfaces. Other trades and school district personnel must stay off the wet or curing surface.
- C. Only mix and apply when meeting manufactures recommended guidelines.

The General Contractor shall provide temporary barriers as required to prevent public entry to construction area and to protect adjacent properties from damage during construction operation.



### APT

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## **1.06 WARRANTY**

- A. Provide manufacturers standard five (5) year warranty.

## **PART 2- PRODUCTS**

### **2.01 SUPPLIER**

- A. Advanced Polymer Technology  
109 Conica Lane/PO Box 160  
Harmony PA 16037  
724-452-1330

### **2.02 MATERIALS**

- A. Spurtan® BS – A 13mm polyurethane bound running track surface with a structural spray finish.

Materials include:

1. Qualipur Polyurethane primer
2. SBR Black Rubber
3. Qualipur Polyurethane binder
4. Melos EPDM Spray Rubber
5. One Component Qualipur Structural Spray

## **PART 3- EXECUTION**

### **3.01 EXAMINATION**

- A. The General Contractor shall verify that all asphalt/concrete paving meets all dimensional accuracy, strength, and compaction. Notify owner of any deficiencies. Recommended compaction of asphalt and sub base is 95%.



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- B. The General Contractor shall verify that all concrete work meets all required tolerances.

Notify owner of any deficiencies.

- C. Upon completion of paving, it is the responsibility of the paving contractor to water flood the surface with the use of a water truck. If after 30 minutes on a 70° F day, “bird bathes” are evident in a depth more than 1/8” the paving contractor, track surfacing contractor and the owner’s representative will determine the best method of correction.

### 3.02 PRODUCT AND MATERIAL DESCRIPTION

- A. The Spurtan® BS – A 13mm polyurethane bound running track surface with a structural spray. The base layer is a paved in place rubber granule and a Qualipur polyurethane binder basemat. Two coats of a mixture of colored Qualipur Structural Spray and Melos EPDM spray rubber are then structurally sprayed onto the base to form a textured finish.
- B. Rubber (Black SBR): The basemat rubber shall be specifically graded Styrene Butadiene Rubber (SBR). SBR is to be dried to no less than 2.5% moisture and sealed in bags.
- C. Polyurethane Binder: The basemat shall be bound by moisture-cured, Qualipur polyurethane, compatible with the basemat rubber. No asphaltic emulsions or epoxies are allowed in the basemat. Installation of the basemat shall take place with a specially designed track-paving machine to an average depth of 11 mm. No sprayed basemat systems will be allowed.
- D. One Component Structural Spray: The basemat shall be coated by a pigmented, one component, Qualipur polyurethane resin based, structural spray mixed with Melos spray rubber.

### 3.03 APPLICATIONS PROCEDURES

- A. The entire asphalt or concrete track surface shall be clean and free of dirt, oil, grease or any other residue upon arrival of the installation team. Any dirt, etc. shall be pressure washed off the base by the general contractor.



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- B. Prime entire surface area with a compatible Qualipur polyurethane primer. Mask and protect adjacent structures, as required. Primer shall dry to a tack-free condition, but no longer than 24 hours, for application of basemat. The consumption rate is 0.29 lbs/sy (0.16 kgs/sm).
- C. Mix the binder and granules until all rubber is thoroughly coated transport onto to the track and apply using a paving machine that is specifically designed for this type of application. For an average 11 mm mat the consumption is 14.94 lbs/sy (8.11 kgs/sm) of SBR rubber and 3.52 lbs/sy (1.91 kgs/sm) Qualipur binder. Apply to the specified thickness.
- D. Mix the structural spray and spray rubber until thoroughly coated. The mixture should be sprayed in two separate applications. Apply the second coat, in an opposite direction as to the first. The minimum application rate is 2.16 lbs/sy (1.17 kgs/sm) for the Qualipur structural spray and 1.44 lbs/sy (0.78 kgs/sm) EPDM spray rubber. Apply specified amounts to achieve proper coverage.

### 3.04 STRIPING

- A. All line marking paint shall be compatible and approved for the synthetic surfacing. Only an experienced track-stripping specialist shall perform the line striping.

**END OF SPECIFICATION – SPURTAN® BS SYSTEM**

Rev 2 WB 03.05.18



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**Rekortan<sup>®</sup> RESURFACE**

*Spartan Respray*



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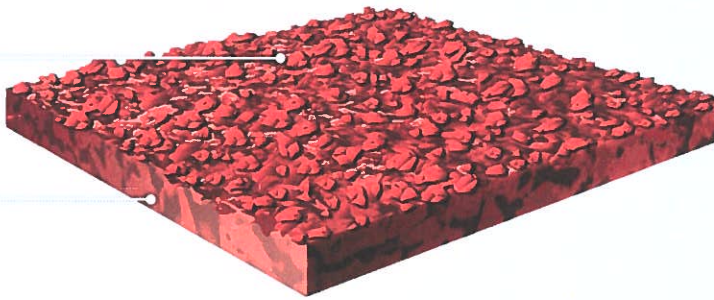
SMART  
TECHNOLOGY  
AVAILABLE

## Rekortan<sup>®</sup> RESURFACE

Rekortan Resurface is available to maintain and prolong the use of your track

Fluid-applied Qualipur 5050 polyurethane and EPDM rubber granules

Layer of Qualipur primer



### HIGHLIGHTS

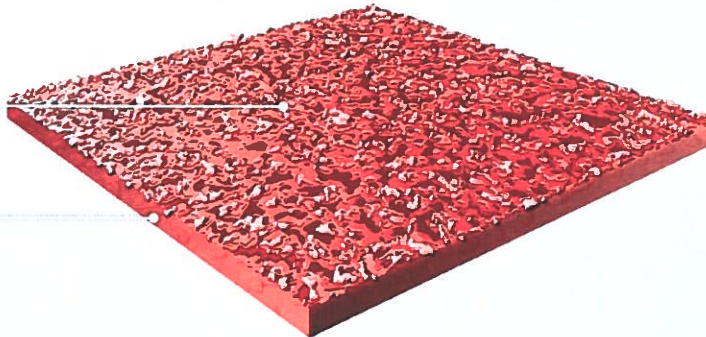
- To upgrade your existing track surface
- Impermeable, polyurethane and EPDM
- No solvents added
- Free of mercury and lead
- Premium colors available upon request
- All PU components made in the USA

## Spartan<sup>®</sup> Respray

Spartan Respray is available to maintain and prolong the use of your track

Structural spray and EPDM spray rubber blend

Layer of Qualipur primer



### HIGHLIGHTS

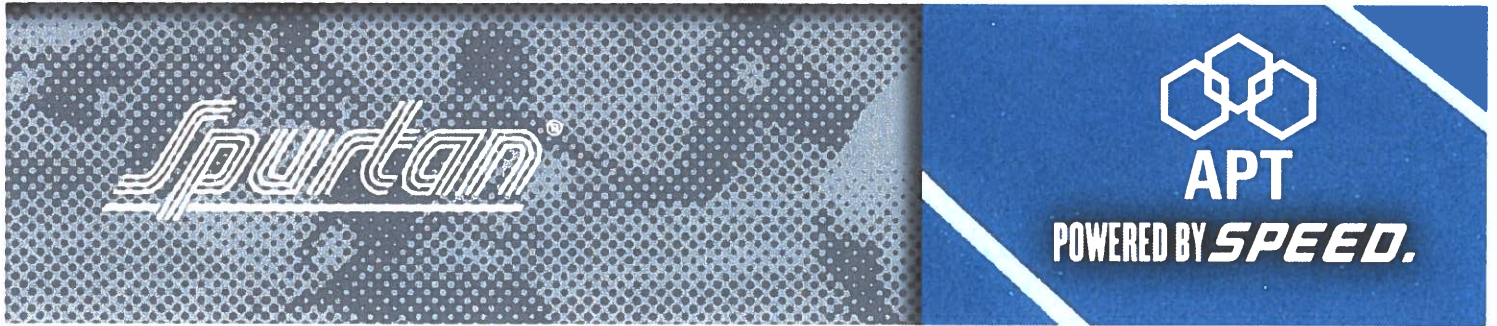
- To maintain & prolong the life of your track
- To add additional resilience to the surface
- Available in multiple colors
- UV resistant aliphatic coatings available for special color requests like purple, orange, light blue
- Free of mercury and lead
- All PU components made in the USA

**sportgroup**  
THE SURFACE SPECIALISTS



www.rekortan.com  
info@rekortan.com





## **SYNTHETIC TRACK SURFACING- SPURTAN® RESPRAY SPECIFICATION**

### **PART 1- GENERAL**

#### **1.01 SUMMARY**

A. The contract work to be performed under this section consist of furnishing all required labor, materials, equipment, implements, parts and supplies necessary for, the surfacing in accordance with these specifications and indicated on the drawings.

1. Spartan® Respray - Polyurethane bound running track re-surfacing with one component structural spray.

#### **1.02 CODES AND STANDARDS**

A. Codes and standards follow the current guidelines set forth by the International Association of Athletics Federation (IAAF), the National Collegiate Athletic Association (NCAA) or the National Federation of State High School Associations (NFHS).

#### **1.03 SUBMITTALS AND SUBSTITUTIONS**

A. Request for deviations or substitutions from the specifications must be made in writing seven days prior to the bid date. Complete product data including specifications, application rates, mixing instructions and a sample shall be sent with the request to the district and/or its agent for an evaluation. Alternatives will be allowed only by addendum.

1. Submit three (3) sets of manufacturer's product data sheets including installation guidelines and maintenance guidelines.
2. Submit three (3) representative track samples in the color of surfacing to be installed.
3. Submit Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for all individual components of the product being installed.

4. Submit evidence that the synthetic surfacing contractor is a member of the American Sports Builders Association (ASBA).

#### **1.04 QUALITY ASSURANCE**

- A. The track surface will be applied by an installer authorized by APT. The contractor shall have a current contractor's license, as well as a current sales tax and use tax number if applicable.
- B. Successful contractor will provide proof of insurance as well as performance and payment bonds if required.
- C. **All polyurethanes used must be manufactured by an ISO 9001 and ISO 14001 Certified company. Manufacturer's ISO 9001 and ISO 14001 certificate must accompany bid.**

#### **1.05 SITE CONDITIONS**

- A. Weather: Surfacing shall not begin if rain is imminent, if gusting winds are occurring or when the threat of freezing exists within 24 hours.
- B. Site: During any surfacing and striping, sprinkler systems must be shut off or controlled so that no water falls on the track or event area surfaces. Other trades and school district personnel must stay off the wet or curing surface.
- C. Do not apply rubberized topping when base surface temperature is less than 50° F.
- D. The General Contractor shall provide temporary barriers as required to prevent public entry to construction area and to protect adjacent properties from damage during construction operation.

#### **1.06 WARRANTY**

- A. Provide manufacturers standard three (3) year warranty for track resurfacing projects.



#### **APT:**

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## **PART 2- PRODUCTS**

### **2.01 SUPPLIER**

- A. Advanced Polymer Technology  
109 Conica Lane; PO Box 160  
Harmony, PA 16037  
724-452-1330

### **2.02 MATERIALS**

- A. Spurtan® Respray- Polyurethane bound running track re-surfacing with one component structural spray.

Materials include:

1. Qualipur Polyurethane primer
2. One-Component Qualipur Structural Spray
3. Melos EPDM Spray Rubber

## **PART 3- EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing track surface for dimensional stability, strength, and surface preparation. Notify owner of any deficiencies.
- B. Entire surface shall be clean and free of all dirt, oil, grease or any other foreign residue. It is the responsibility of the General Contractor to ensure that the surface is thoroughly clean in all areas of the new and/or existing asphalt or concrete base as necessary to ensure adhesion of the track surface.
- C. Beginning installation stipulates track installer “accepts” existing conditions. Adhesion to the existing surface is the surfacing contractor’s responsibility



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### 3.02 PRODUCT AND MATERIAL DESCRIPTION

- A. Spurtan® Respray- Polyurethane bound running track re-surfacing with one component structural spray. Two coats of a mixture of colored polyurethane and spray rubber, which are structurally sprayed onto the existing base to resurface current track surface.
- B. Rubber (EPDM): Melos EPDM spray rubber (or approved equivalent).
- C. One Component Structural Spray: The current surface shall be coated by using a one component, Qualipur polyurethane resin based, structural spray mixed with Melos spray rubber (or approved equivalent).

### 3.03 APPLICATIONS PROCEDURES

- A. The entire surface shall be clean and free of dirt, oil, grease or any other matter prior to application of the resurfacing materials. Any dirt, construction debris, etc. shall be pressure washed off the track surface by general contractor.
- B. Prime entire surface area with a compatible Qualipur polyurethane primer. Mask and protect adjacent structures, as required. Primer shall dry to a tack-free condition, but no longer than 24 hours, for application of Resurface layer. The consumption rate is 0.29 lbs/sy (0.16 kgs/sm).
- C. Mix the structural spray and spray rubber until thoroughly coated. The mixture should be sprayed in two separate applications. Apply the second coat, in an opposite direction as to the first. The minimum application rate is 1.92 lbs/sy (1.04 kgs/sm) for the Qualipur structural spray and 1.27 lbs/sy (0.69 kgs/sm) EPDM spray rubber. Apply specified amounts to achieve proper coverage.

### 3.04 STRIPING

- A. All line marking paint shall be compatible and approved for the synthetic surfacing. Only an experienced track-stripping specialist shall perform the line striping.

### END OF SPECIFICATION - SPURTAN® RESPRAY

Rev 1 GT/JC 03/19/14



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