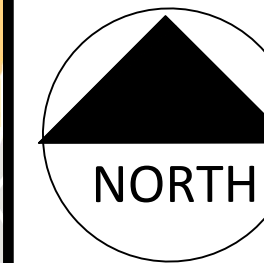
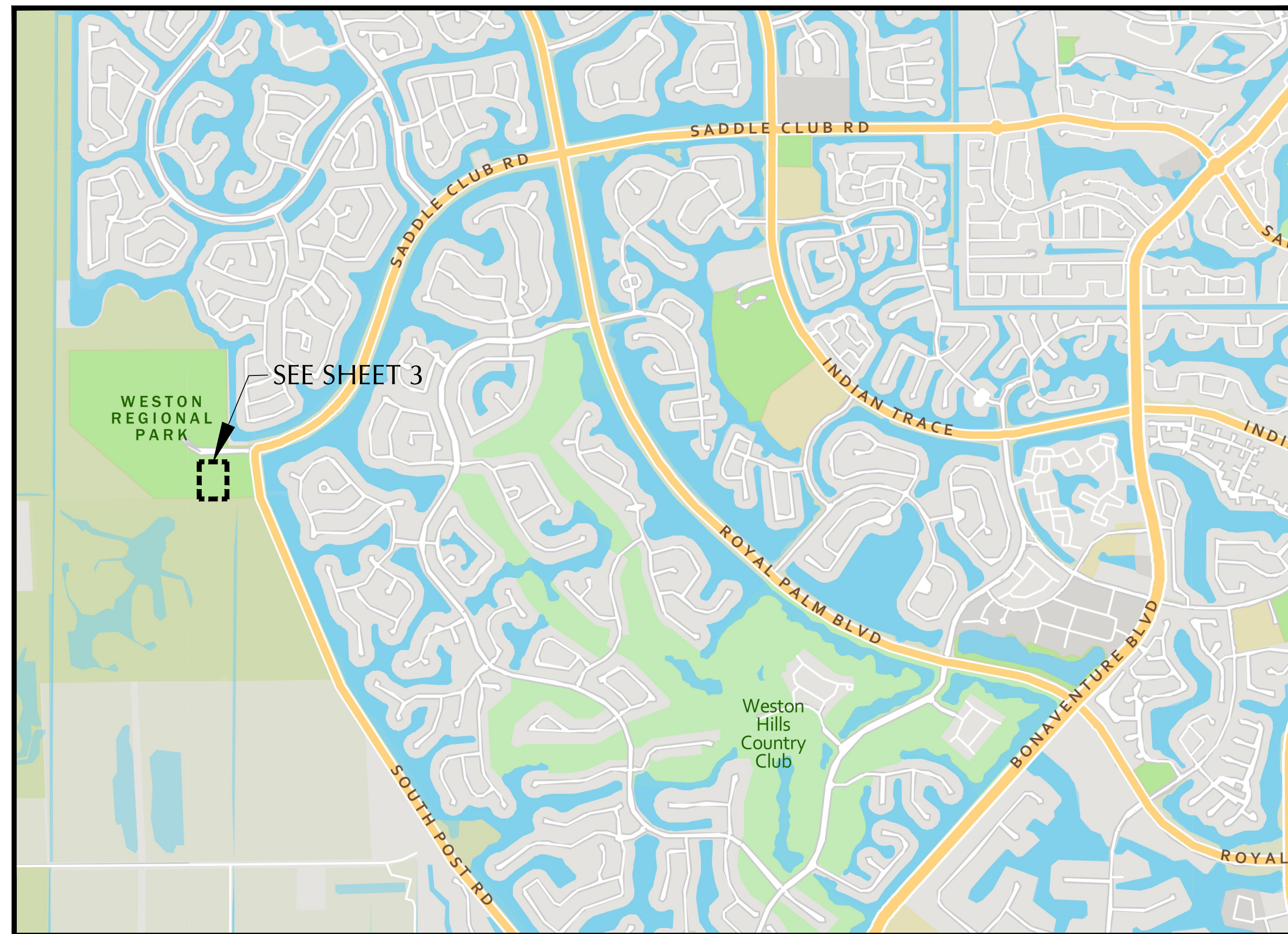
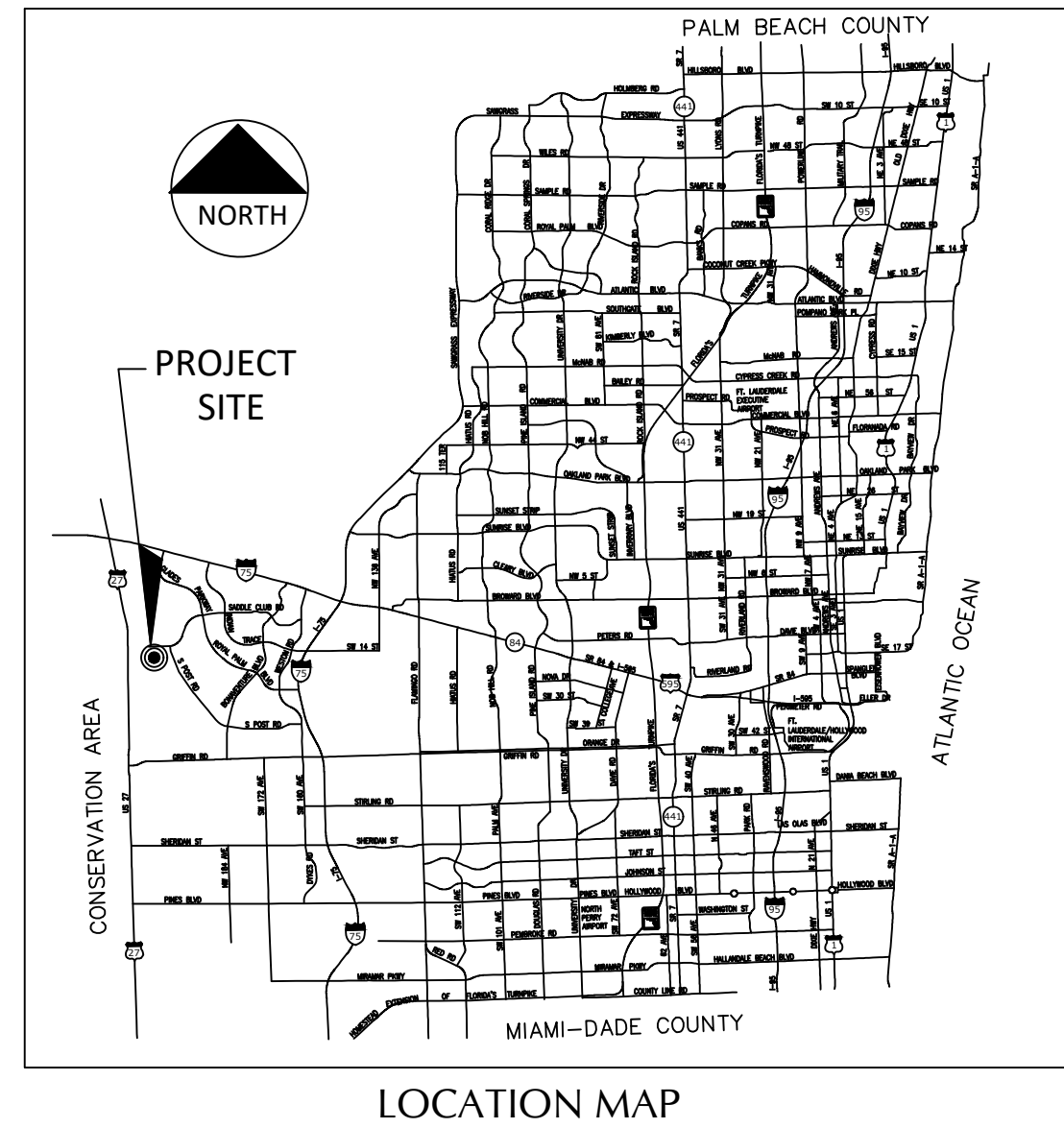


# WESTON REGIONAL PARK RINK 2 & 4 SYNTHETIC TURF REPLACEMENT

20200 Saddle Club Road, Weston FL 33327



CITY OFFICIALS

MAYOR: MARGARET BROWN  
 COMMISSIONERS: BYRON L. JAFFE, MARY MOLINA-MACFIE, CHRIS EDDY, HENRY MEAD  
 CITY MANAGER/CEO: DONALD P. DECKER

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER PAGE
2	LOCATION PLAN
3	SITE PLAN
4	SHOCK & DRAIN PAD SPECIFICATIONS
5	SYNTHETIC TURF SPECIFICATIONS
6	SYNTHETIC TURF INFILL SPECIFICATIONS

## Project Key Map

### PROJECT SCOPE OF WORK

1. REMOVAL AND DISPOSAL OF EXISTING TURF SYSTEM & SHOCK/DRAIN PAD
2. CLEAN & PREPARE RINK SURFACE FOR NEW SHOCK & DRAIN PAD
3. FURNISH & INSTALL THE BROCK POWERBASE YSR GEN II SHOCK & DRAIN PAD
4. FURNISH & INSTALL HELLAS MATRIXTURF SYNTHETIC TURF SYSTEM
5. FURNISH & INSTALL BROCKFILL NON-RUBBER NATURAL INFILL
6. OBTAIN ALL PERMITS AS REQUIRED FROM ALL AGENCIES HAVING JURISDICTION

**BID SET 08-31-22**

PERMITTING AGENCIES	DATE SUBMITTED	CGACOW INITIALS	DATE APPROVED	PERMIT NUMBER
CITY OF WESTON - BUILDING DEPARTMENT APPROVAL				
CITY OF WESTON - UTILITY ENGINEERING APPROVAL				
CITY OF WESTON - LANDSCAPING APPROVAL				
CITY OF WESTON - ZONING APPROVAL				

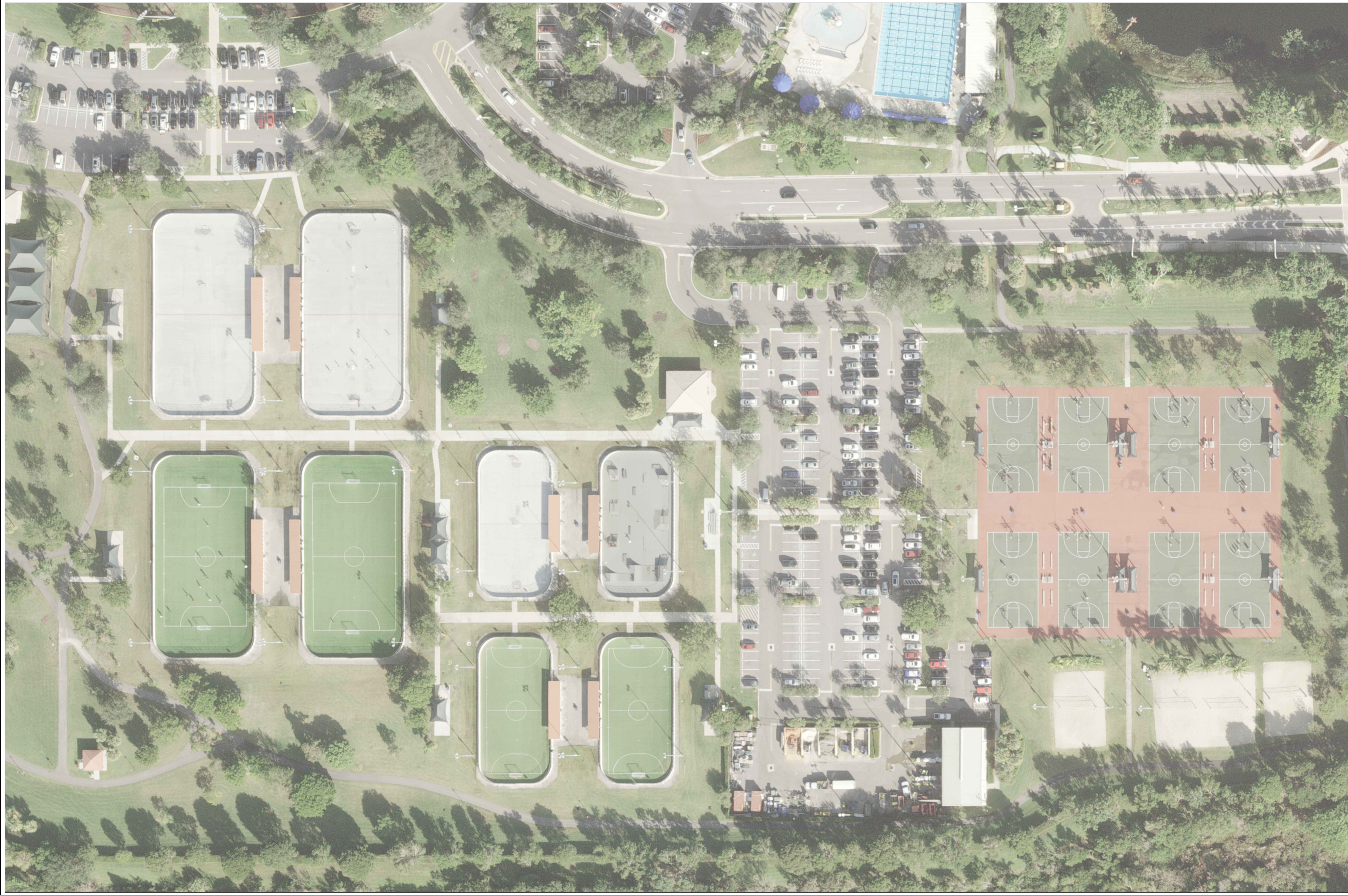
NO	DATE	REVISION	BY

Sheet **1**

Engineering Division  
 Drawn by: J Casio Date: 08-31-22  
 Checked by: RC Date: 08-31-22  
 As-built drawn by: Date:  
 Field Inspector: Date:  
 Field Book No.:

COVER PAGE  
 WESTON REGIONAL PARK RINK 2 & 4 SYNTHETIC TURF REPLACEMENT  
 20200 Saddle Club Road, Weston FL 33327

CITY OF WESTON  
 DEPARTMENT OF PUBLIC WORKS  
 2599 South Post Road, Weston, Florida 33327



**CITY OF WESTON**  
DEPARTMENT OF PUBLIC WORKS  
2599 South Post Road, Weston, Florida 33327

**LOCATION PLAN**  
**WESTON REGIONAL PARK RINK 2 & 4 SYNTHETIC TURF REPLACEMENT**  
20200 Saddle Club Road, Weston FL 33327

Engineering Division  
Drawn by: J Casio  
Checked by: RC  
As-built drawn by:  
Field Inspector:  
Field Book No.:

Date: 08-31-22

Date: 08-31-22

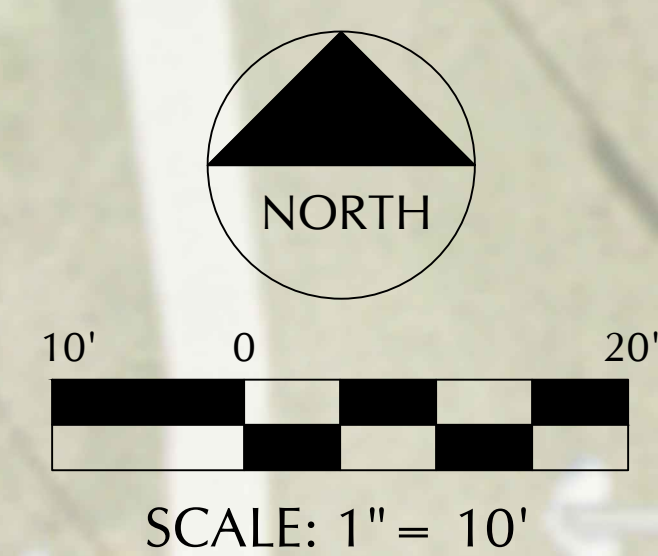
Date:

Sheet

2

EXISTING SIDEWALK TO REMAIN

EXISTING SIDEWALK TO REMAIN



**RINK NO. 2**  
 REMOVE AND DISPOSE  
 EXISTING TURF  
 SYSTEM &  
 SHOCK/DRAIN PAD  
 CLEAN & PREPARE  
 RINK SURFACE FOR  
 NEW SHOCK & DRAIN  
 PAD  
 FURNISH & INSTALL  
 THE BROCK  
 POWERBASE YSR GEN  
 II SHOCK & DRAIN PAD  
 FURNISH & INSTALL  
 HELLAS MATRIXTURF  
 SYNTHETIC TURF  
 SYSTEM  
 FURNISH & INSTALL  
 BROCKFILL  
 NON-RUBBER NATURAL  
 INFILL  
 AREA = 19,250 SF

**RINK NO. 4**  
 REMOVE AND DISPOSE  
 EXISTING TURF SYSTEM  
 & SHOCK/DRAIN PAD  
 CLEAN & PREPARE RINK  
 SURFACE FOR NEW  
 SHOCK & DRAIN PAD  
 FURNISH & INSTALL THE  
 BROCK POWERBASE  
 YSR GEN II SHOCK &  
 DRAIN PAD  
 FURNISH & INSTALL  
 HELLAS MATRIXTURF  
 SYNTHETIC TURF  
 SYSTEM  
 FURNISH & INSTALL  
 BROCKFILL  
 NON-RUBBER NATURAL  
 INFILL  
 AREA = 19,250 SF

RINK No. 2

RINK No. 4

EXISTING SLAB &  
SHELTERS TO  
REMAIN

EXISTING  
SIDEWALK TO  
REMAIN

EXISTING SIDEWALK TO REMAIN

EXISTING SIDEWALK TO REMAIN

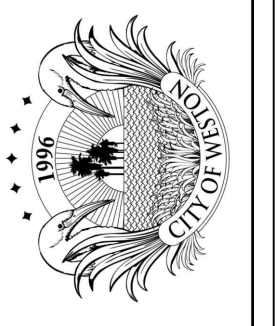
EXISTING SIDEWALK  
TO REMAIN

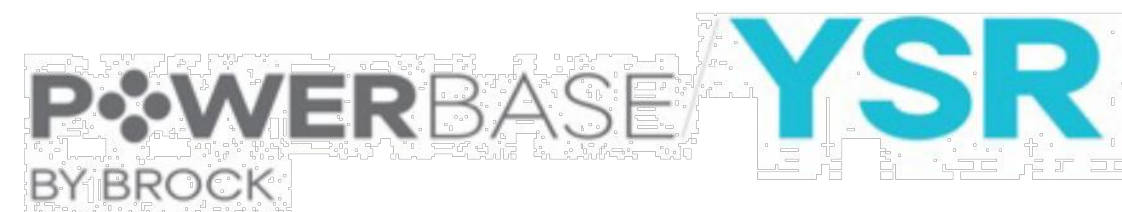
EXISTING SIDEWALK  
TO REMAIN

Engineering Division	Date: 08-31-22
Drawn by: J Casio	Date: 08-31-22
Checked by: RC	Date: 08-31-22
As-built drawn by:	Date:
Field Inspector:	Date:
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LOCATION PLAN  
 WESTON REGIONAL PARK RINK 2 & 4 SYNTHETIC TURF REPLACEMENT  
 20200 Saddle Club Road, Weston FL 33327

CITY OF WESTON  
 DEPARTMENT OF PUBLIC WORKS  
 2599 South Post Road, Weston, Florida 33327





### Typical Properties & Specification

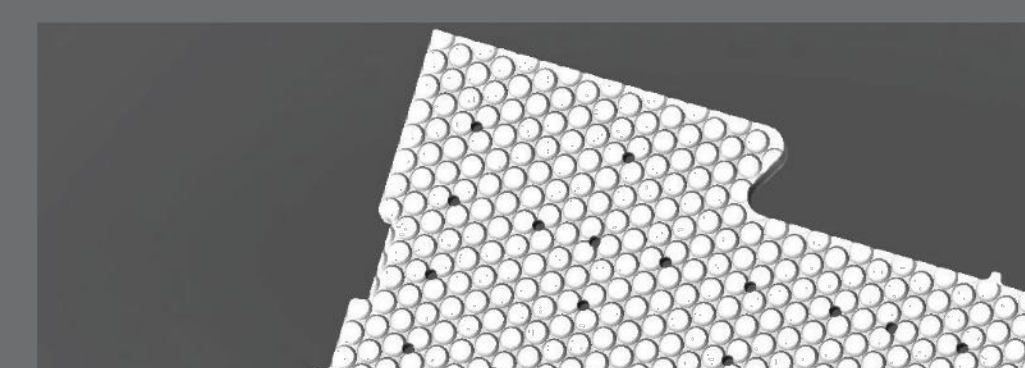
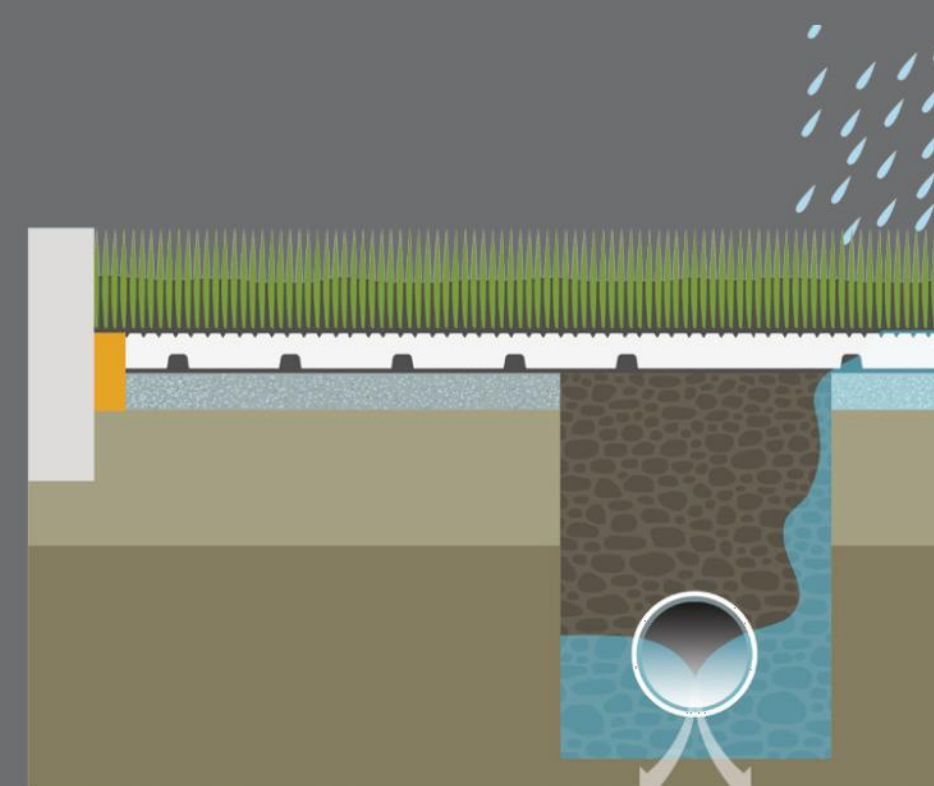
<b>Product Number</b>	PBYSR
<b>Material Type</b>	Expanded Polypropylene
<b>Part Format</b>	Interlocking panel
<b>Part Size, nominal net coverage</b>	24.15 sq ft per panel (2.24 sq m)
<b>Part Thickness, nominal</b>	1.00 in (25 mm)
<b>Part Length, nominal</b>	73.5 in (1867 mm)
<b>Part Width, nominal</b>	49.0 in (1245 mm)
<b>Part Weight, nominal</b>	5.2 lbs per panel (2.36 kg)

Property (Shock Pad Only)	Typical Value – Nominal Density		Specification
<b>Tensile Strength</b> <sup>1</sup>	92 psi	> 80 psi	ASTM D3574-08 Test E
<b>Tensile Elongation</b> <sup>1</sup>	41%	> 30%	ASTM D3574-08 Test E
<b>Compression Strength</b> <sup>2</sup> @ 25% strain @ 50% strain	26 psi 38 psi	> 20 psi > 30 psi	ASTM 3575-08 Test D
<b>Compression Set</b> <sup>3</sup> 35 psi for 30 minutes – Set after 24 hrs	7.2%	< 10%	Brock Test Method
<b>Coefficient of Linear Thermal Expansion</b> <sup>4</sup> per 1° C change	0.083 mm/m	< 0.10 mm/m	ASTM D696
<b>Thermal Conductivity (Lambda Value)</b> <sup>5</sup>	0.0377 W/mK	Information Only	EN 12667:2001 / ISO 7345
<b>Thermal Resistance (R Value)</b> <sup>5</sup>	0.64 Km <sup>2</sup> /W	Information Only	EN 12667:2001 / ISO 7345
<b>Water Absorption</b> <sup>6</sup> After 24 hrs immersion	~ 1%	≤ 1%	DIN 534 28
<b>Water Permeability</b> <sup>7</sup>	720 in / hr	> 500 in / hr	ASTM 1551 Suffix-DIN 18-035, Part 6
<b>* Lateral Transmissivity</b> <sup>8</sup> Flow Rate @ .005 Gradient Flow Rate @ .0075 Gradient Flow Rate @ .01 Gradient	0.57 gpm/ft 0.74 gpm/ft 0.90 gpm/ft	0.50 gpm/ft - -	ASTM D4716-14
<b>Head Injury Criterion 1,000 - Critical Fall Height</b> <sup>9</sup>	1.2 m	1.2 m	ASTM F3146-18, Procedure A
<b>Gmax</b> <sup>9</sup>	79 g	< 90 g	ASTM F355-16 Missile A
<b>Shock Absorption</b> <sup>9</sup>	70%	> 60%	ASTM F3189-17
<b>Vertical Deformation</b> <sup>9</sup>	9.7mm	< 10mm	ASTM F3189-17 Advanced Artificial Athlete
<b>Vertical Deformation</b> <sup>9</sup>	6.9mm	< 7mm	EN 14809:2005 Artificial Athlete
<b>Resistance to Chemicals</b> <sup>10</sup>	1 / 2	≤ 2	JSP Method based on ASTM F925
<b>Resistance to Acid and Alkaline Liquids</b> <sup>11</sup> % tensile strength loss - 100yr model	0% after 12 days	0% after 12 days	EN 14030:2010 ISO 12960:1998
<b>Resistance to Oxidation (Accelerated Aging)</b> <sup>12</sup> % tensile strength loss - 100yr model	6% after 56 days @ 110°C	6% after 56 days @ 110°C	EN ISO 13438:2004
<b>Microbiological Analysis</b> bacteria resistance <sup>13</sup> fungi resistance <sup>14</sup>	No growth No growth	No growth No growth	ASTM G22-76 ASTM G21-96
<b>Environmental Standards Testing</b> Cradle to Cradle <sup>15</sup> Heavy Metals <sup>16/17</sup> VOC's <sup>16/17</sup> SVOC's <sup>16/17</sup> California Title 22 <sup>17</sup> California Proposition 65 <sup>18</sup>	Certified Compliant to EPA human health standards, surface water quality, groundwater quality Compliant Certified	Certified Compliant to EPA human health standards, surface water quality, groundwater quality Compliant Certified	Cradle to Cradle Products Innovation Institute EPA 6010B, 7470A, 7471A EPA 8260B EPA 8270C California Code of Regulations, Title 22, Division 4.5, Chapter 11 California Proposition 6/614

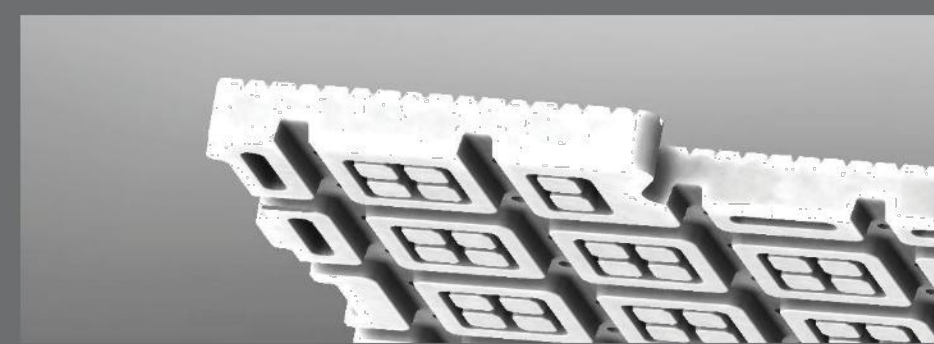
**DATA ARE TYPICAL PROPERTIES ONLY. THIS DOCUMENT DOES NOT CREATE ANY WARRANTY, EXPRESS OR IMPLIED**  
 The Brock PowerBase product group includes PowerBase PRO, PowerBase YSR, Performance Base F24, Performance Base F20  
 \* Note that ASTM D4716 flow rate and hydraulic transmissivity values are not an indication of overall athletic field drainage performance.  
 1-18 Test reports available upon request

## Proven, fast drainage.

Brock PowerBase YSR has large lateral channels that help transport water to the collector system along the edge. ASTM D3885 Dual-ring infiltrometer testing on fields that use the Brock cross section have shown field drainage rates of greater than 70" per hour. EN12616 drainage test produces vertical drainage of the panel alone greater than 100" per hour.



Shock absorbing pistons, dovetail interlock, turf support edges, and 2 million drain holes on a typical field.

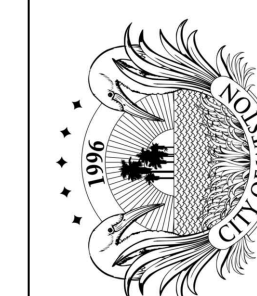


Large drainage channels, shock absorbing structures, and 25mm thickness provide both player safety and effective drainage.



**STABLE INTERLOCKING SYSTEM** No cutting, no gluing, no taping, no shadowing through turf. Consistent feel and safety across every inch of your field. Larger panels speed up installation, can be installed in both directions

US Patents: 8,236,392, 8,353,640 and D637318 and other patents pending.



# matrix<sup>®</sup> TURF

**matrix<sup>®</sup> 42-46 oz. Synthetic Turf System**  
Sample Specifications

Standard	Property	Specification
1	ASTM D418/D5848	Pile Weight 42 - 46 oz. /Sq. Yd.
2	ASTM D5848	Primary and Secondary Backing Weight 7.9 oz. /Sq. Yd.
3	ASTM D5848	Secondary Coating Weight 26 oz. /Sq. Yd.
4	ASTM D5848	Total Weight 75.9 - 79.9 oz. /Sq. Yd.
5	ASTM D1907	Yarn Denier 12,400
6	ASTM D418/D5848	Pile Height Finished 1 3/4" - 2 1/2"
7	ASTM D5793	Tufting Gauge 1/2"
8	ASTM D5848	Primary Backing Tri-layer woven Polypropylene
9	ASTM D5848	Secondary Coating Polyurethane
10	ASTM D1335	Tuft Bind without Infill 10 lbs. +/-
11	ASTM D1682/D5034	Grab Tear (width) 275-287.4 lbs. Force
12	ASTM D1682/D5034	Grab Tear (length) 300-340.9 lbs. Force
13	ASTM D4991	Carpet Permeability >40 inches/hour
14	ASTM D2859	Flammability (Pill Burn) Pass
15	ASTM F355	G-max (Impact Attenuation) <130 at installation <190 over warranty life
16	ASTM E-11	Realfill™ Infill 5 - 6 lbs +/- per square foot
17		Fabric Width 15'
18		Perforation 3/16" Holes 4" X 4"
19		Yarn Average 180 microns

All Characteristics listed above nominal +/- 5%

This document is for illustrative purposes and may change without notice. Purchaser should verify that a representative specification of the system to be installed has been received prior to the establishment of a project or contract.

Matrix<sup>®</sup> turf incorporates life like individual blades of grass, tufted into the strongest and most dimensionally stable backing system available with a polyurethane pre-coat for the ultimate in tuft-bind.

Matrix is filled with a pea gravel (2-3 lbs) and cuboidal rubber infill (2.5-3.0 lbs) - Realfill™.

Infill will be a minimum of 75% of synthetic turf pile height.

The monofilament fibers curl down to cover and trap the rubber granules preventing the system from expelling the infill upon impact.

Matrix is a fully UV stabilized system ideal for outdoor use.



**HELLAS CONSTRUCTION, INC.**  
12710 Research Boulevard Suite 240  
Austin, Texas 78759  
T: 512.250.2910  
F: 512.250.2910  
WWW.HELLASCONSTRUCTION.COM



# matrix<sup>®</sup> TURF

## SPORTS APPLICATIONS:



## NOTABLE INSTALLATIONS:

- ★ AT&T STADIUM
- Cal UNIVERSITY OF CALIFORNIA-BERKELEY
- Eastern ILLINOIS UNIVERSITY
- BU BAYLOR UNIVERSITY
- H HERMISTON HIGH SCHOOL



### MATRIX TURF

Matrix<sup>®</sup> Turf uses high-quality, durable materials that give fibers a natural look and feel – providing a soft and strong surface. The fibers are tufted into a durable, triple-layer backing, then coated with a high-quality polyurethane to secure them in place.



### REALFILL

This infill option features a leveled layer of clean, dust-free SBR granules that completes the REALFILL™. The unique shape minimizes splashing and shifting.



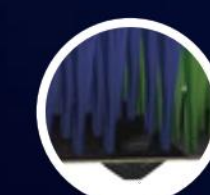
### PEA GRAVEL

The Pea Gravel holds the system in place while assisting in shock absorption and drainage.



### FIELD LOCK

A durable, eco-friendly, and non-toxic adhesive for exceptionally strong system seams.



### TURF LOCK

Reinforced rivets that are injected into the turf at every inlay, logo, graphic, and field marking.



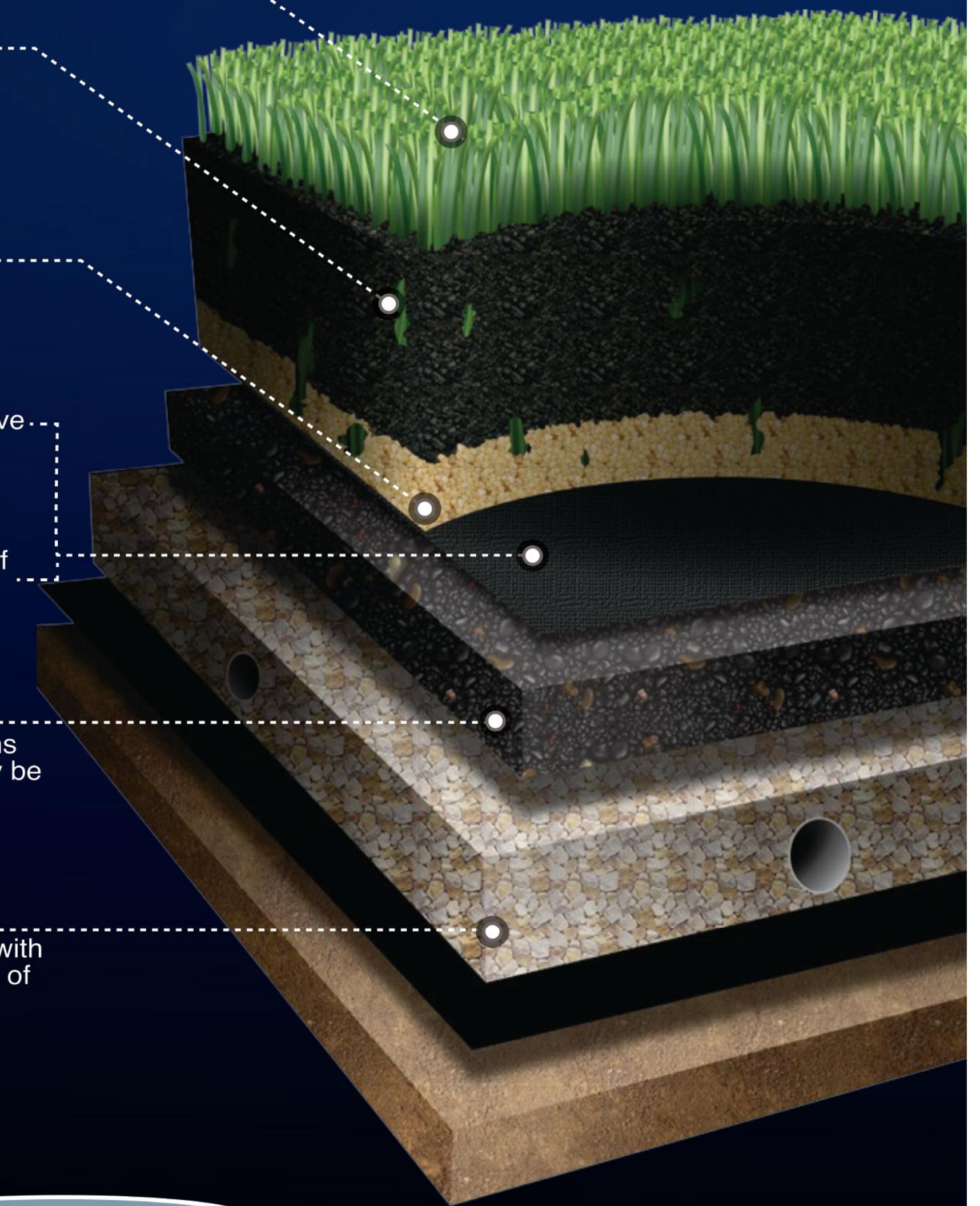
### CUSHDRAIN

An optional CUSHDRAIN<sup>®</sup> elastic layer maintains the systems G-max, extends durability, and may be utilized for several turf life-cycles.



### DRAINSTONE

The foundation for every Matrix Turf field starts with free draining stone, allowing for a higher degree of water migration and stability.



BUILDING IT RIGHT. FROM START TO FINISH.



1-800-233-5714 | HELLASCONSTRUCTION.COM



## Typical Properties & Specification



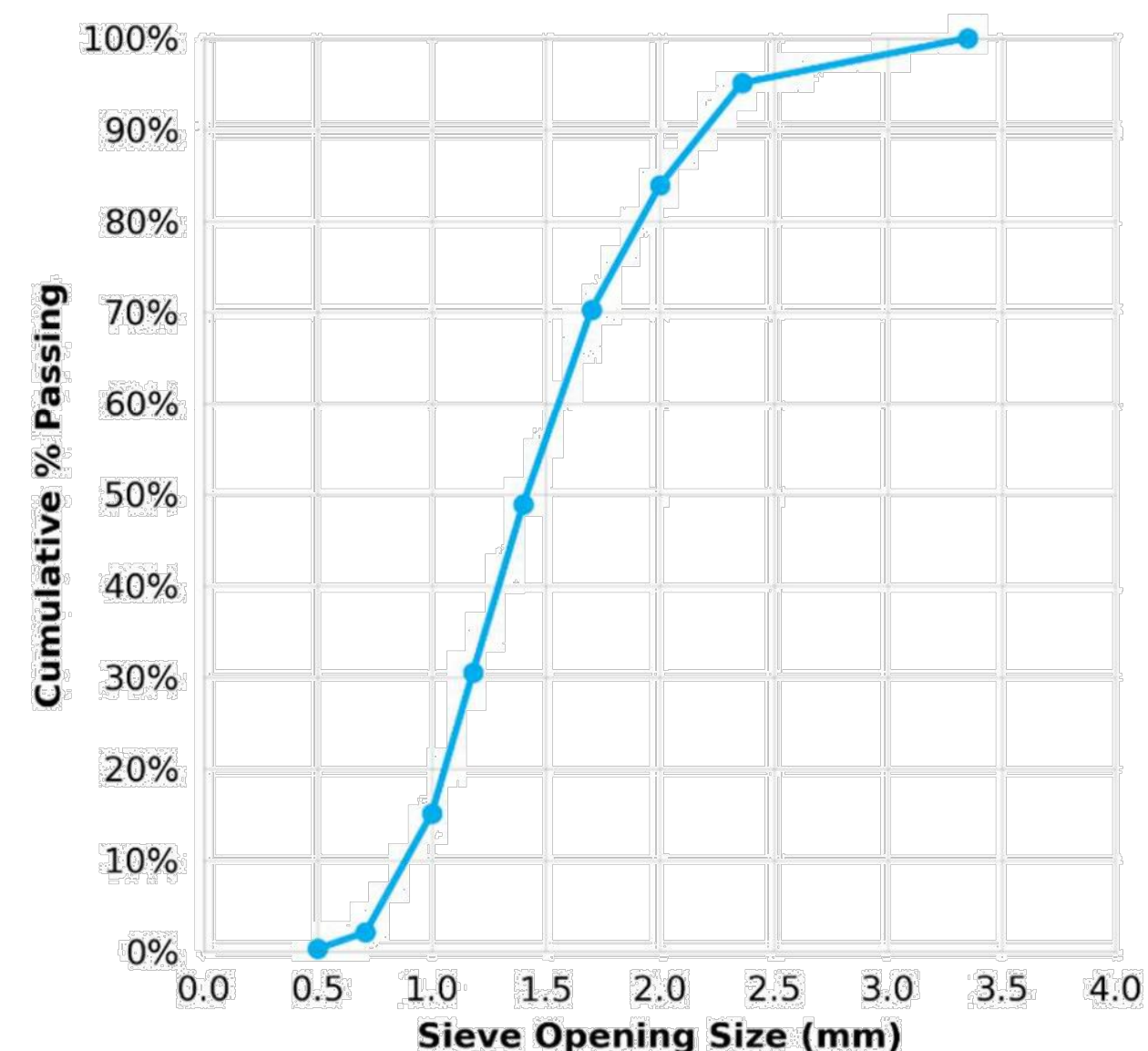
<b>Product Name</b>	BrockFILL™
<b>Product Description</b>	Artificial turf infill made from engineered wood particles produced in the USA
<b>Bulk Density</b>	17 lb / cu. ft.
<b>Packaging</b>	45 cu. ft. supersacks (approx. 750 lb each) – 2 supersacks per pallet
<b>Moisture Content</b>	8 – 15% (at time of production)
<b>Color</b>	Natural to Medium Brown

### Sieve Analysis (Typical Results)

ASTM C136, modified (Ro-Tap RX-29, 5 min shaking)

Sieve Size (mm)	Cumulative % Passing		
	Typical Value	Typical Range	Specification
3.35	100	99 – 100	> 99
2.36	95	90 – 100	> 90
2.00	84	75 – 98	-
1.70	70	60 – 90	-
1.40	49	35 – 70	-
1.18	31	20 – 50	-
1.00	15	5 – 35	-
0.71	2.1	0 – 6	< 6
0.5	0.3	0 – 2	< 2

Typical Particle Size Distribution Curve



### Environmental Compatibility Testing

Test	Method	Result
Pesticide Testing	AOAC Method 2007.01	PASS
Chlorinated Acidic Herbicides	FDA PAM II Method 180.292	PASS
Total CAM 17 Metals and Hexavalent Chromium	EPA Methods 3050B / 6020 EPA Methods 3060A / 7199	PASS
Leachable CAM 17 Metals and Hexavalent Chromium	EPA Methods 1312 / 6020 EPA Methods 1312 / 7199	PASS
Leachable Semi-Volatile Organic Compounds including Phenols	EPA Methods 1312 / 8270C	PASS

DATA ARE TYPICAL PROPERTIES ONLY. THIS DOCUMENT DOES NOT CREATE ANY WARRANTY, EXPRESS OR IMPLIED.

Test reports available upon request

Patents Pending

Brock USA LLC – March 2020

## Finally, a true replacement for crumb rubber infill.

Since 2004, Brock has led the industry in research about athlete safety and the environmental impacts of artificial turf.

The challenge is to create a system that feels like natural turf and that means changing the one component athletes hate most: crumb rubber infill. It's too hot, it smells, it's too abrasive, it's unstable under foot and its end of life is an environmental tragedy. As global warming continues, climate change will make these surfaces literally too hot to play on.

We were the first ones to achieve Cradle to Cradle environmental certification for our base systems, the first to offer a 25-year warranty, the first to hold national educational forums for designers and scientists, and the first (and still only) to achieve the higher head protection safety levels of pristine natural turf.

Starting in 2015, the Brock team worked with a specialized group of universities, sports testing labs, PhD scientists, engineers, horticulturists, and several sports science experts to develop a solution to these problems. True to Brock form, we left no research question unanswered.

It has been proven in many player studies that athletes prefer natural turf to artificial. Those same studies show that artificial turf fields that use shock pads are universally preferred over those that do not – *so the least preferred system by athletes is artificial turf directly over stone*. Additionally, 1-in-5 concussions happen when the head hits the surface and lower leg injuries are higher on conventional artificial turf than on natural grass. All this has led to a paradigm shift in thinking about artificial turf safety and why it is essential that it mimics well-groomed natural turf. It's what athletes want!

**Now another first: A durable, cool, affordable, best-performance infill engineered for athletes. And it's organic. In a world that is getting too hot, it's time to cool off.**

**"It is a wonderful example of Man and Nature working together."**  
– Brian Jackson, PhD, NC State Department of Horticulture

